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The Lumleian Lectures

ON

A CLINICAL STUDY OF CARDIO-VASCULAR DEGENERATION.

Delivered before the Royal College of Physicians of London

BY J. MITCHELL BRUCE, M.A., LL.D. HON. ABERD., M.D. LOND., F.R.C.P. LOND.,

EMERITUS LECTURER ON THE PRACTICE OF MEDICINE AT, AND CONSULTING PHYSICIAN TO, CHARING CROSS HOSPITAL, ETC.

LECTURE I.

Delivered on March 23rd.

INTRODUCTION.

MR. PRESIDENT, FELLOWS OF THE COLLEGE, AND GENTLEMEN,—I desire to convey my best thanks to you, Sir, and to the Censors' Board for having honoured me by appointing me to fill this ancient and honourable office in the present year, and to commemorate with you the devotion and liberality of Dr. Richard Caldwell and Lord Lumley to the College. As well as the distinction that attaches to it, another consideration moved me to accept your invitation. I felt that the discharge of the duty which it involves would afford me an occasion to unburthen my conscience of a sense of neglected opportunities. One who realises that he is numbered among the seniors of the College necessarily has at his service for such a purpose as the present many records of cases, as well as that less determinate possession called "experience," which ought to be turned to some use, but which without special stimulus would lie neglected and finally be lost. My selection of the subject of cardio-vascular degeneration in particular was prompted by the possession of a considerable amount of clinical material bearing upon it. Let me add, by way of further apology, that whilst an examination of records that have been accumulating for years is itself a heavy undertaking, a study of degeneration of the heart and arteries involves so many forms of knowledge, pathological as well as clinical, and what knowledge we may possess of human nature as well as of the nature of life and death themselves, that one presently feels overwhelmed by the difficulties of the task, and astonished at one's temerity in undertaking it. I can only say that, whatever may be the value of this study, it was approached and pursued with an open mind—without prejudice for any one of the many and diverse doctrines on the pathogenesis of arterial sclerosis and of senile changes in the heart.

The presentation of my results will be entirely unsystematic. It will be no methodical and complete description of the clinical characters of cardio-vascular degeneration, but will consist of the results of an examination of various portions of the subject that have a distinct bearing on practice—that is, on prognosis and treatment. The title, and my definition of it, must therefore be accepted as elastic. I shall not attempt to draw a line between degeneration and chronic inflammation, between atheroma and chronic aortitis. Whilst I shall have much to say about syphilis of the aorta and heart, I shall make but passing references to aneurysm, and to syphilis—or indeed other diseases—of the cerebral arteries, or to rheumatism as a precedent of degeneration. Nor does time permit me to discuss—if I could discuss it with any profit to medicine at the present time—the vast clinical and pathological problem of chronic Bright's disease in its relations to cardio-vascular degeneration, and the part played in it by that influence of evil significance, high blood pressure, which cannot be satisfactorily accounted for by our present knowledge, and which as to its nature or origin constitutes the unknown quantity, the mysterious x, that is being sought with so much industry by observers at this moment.

I need not dwell on the importance of this subject. According to the report of the Registrar-General for 1908 the mortality from cerebral hæmorrhage in this country in persons over 35 years of age is 2·083 in a million men and 2·284 in a million women. It would appear that many lives are lost from arterial disease at an age when work ought to be still carried on in the interests of the family and the country, at an age when a man's reasonable ambitions, as a rule, have not yet been attained.

DURATION OF LIFE.

We must be content with limitation of life. Death is natural, for it is universal—individual death. But equally natural and universal is the desire to make death remote. To attain the maximum age has been a subject of unbroken interest and effort in the history of the world: to lengthen the span of a healthy, peaceful, unclouded old age. Now the natural age of man is not three score years and ten. That age may be the ordinary maximum; but the natural limit of life is the greatest age that has been reached according to authentic records. And why should not life be interminable? This is a vain question, interesting as was the discussion of it by Sir William Allchin in his oration on "The Breaking Strain." But it serves to suggest another question—one of the questions that inspired my present study. What is the origin, the meaning of this process of degeneration of the cardio-vascular system that is completed in death; and why should its fatal effects be met with so often before their time? I will refer but briefly to the first part of this question—the meaning, the general pathology, of degeneration as it affects the heart and arteries, for I must hasten to the examination of the second part of the question—how it comes to be premature—in the hope of finding an answer to it that may have some useful application.

CAUSATION OF CARDIO VASCULAR DEGENERATION.

I would only remind you that life consists in the actions of the countless influences that fall upon the body, and the reactions of the body to them, and that the state of our organs as we find it is the result. The process of wearing-out of the organs of circulation, characterised anatomically by degenerations of different kinds, is a manifestation of this vital process in individuals who have escaped death from the diseases and accidents of earlier life. Regarded comprehensively, the environment, including the pathogenetic influences (so called, but quite indeterminately limited), acts on the heart and arteries in two directions. First, it affects the nutrition of their walls. This is disordered, and may be ruined, by poisons, inorganic and organic, including lead, alcohol, and the products of bacterial activity; by micro-organisms themselves; by the products and other consequences of disordered metabolism; by the spirochæte of syphilis, and by other parasites. No doubt there are also dystrophies of the heart and arteries of nervous origin, central and reflex. And we may perhaps be permitted to assume for the present that simple length of use of the elements of the vascular and cardiac walls may finally wear them out. In constant opposition to these pathogenetic influences on the cardio-vascular tissues are natural provisions for maintaining their nutritive soundness and physiological efficiency. The endocardium and the intima are nourished by the circulating blood in which they are bathed. The vasa cordis and vasa vasorum supply the other structures; and their associated veins and lymphatics provide for elimination. The nervous system affords wholesome impulses which serve to control the processes in favour of health. In the majority of individuals these provisions are sufficient, and continue so for what we are pleased to regard as the natural "expectation" of life.

Thus abundantly provided or protected against the morbific influences which threaten the substance of their walls, how come the heart and arteries to fall victims to them so early in some individuals, sooner or later in all? Vitality fails here, as elsewhere in the body, from either side—from very severity of the essential cause, or from insufficiency of natural resistance—or it fails from both sides together.

How many and powerful the extrinsic elements of the causation of cardio-vascular degeneration are we shall see presently. But of equal etiological importance with the violence or persistence of these is relative insufficiency of the provisions for meeting them. In a small proportion of individuals the materials of the cardiac and arterial tissues are essentially inferior in quality. This is one of the instances of inherited dystrophies—in part the "family heart." But there is another consideration that concerns all individuals. The nutrition of the cardiac and vascular walls is automatic. Now the obvious advantages in this arrangement are secured at the cost of its being self-dependent, which involves a grave risk if disorder or disease arise. The heart and vessels that circulate the blood are fed by the blood—that is, ultimately

by themselves. The blood depends on the vessels for the provision of its own constituents, regeneration and purification. The vasa that supply the heart and arteries are dependent for their own nutrition on the activities and soundness of these. Self-dependence of the circulation, and mutual dependence of its elements of this character, favour the development and extension of vicious circles of malnutrition once disability or damage occurs in any part of the system. Might one venture to speculate that here one finds a reasonable explanation of "wear and tear," the necessary or natural degeneration of the cardio-vascular system and its dependencies?

THE PART PLAYED BY INTERNAL PRESSURE.

The second direction in which the environment influences the organs of circulation is through internal pressure. Whether it acts on the circulation as a whole or only on a portion or a region of it, whether it is in the form of physical stress or of nervous origin, or an effect of specific poisons like lead, or of excess of blood, or of the quality of the blood, or of disturbance of respiration or of excretion, and whether the pressure be directly central (cardiac) in its source or directly peripheral, high blood pressure would strain the walls from within were it not opposed by another set of natural provisions. These are, first and most obvious, the passive resistance, the material "strength" of the parietal tissues, the fibrous structures of the adventitia and the pericardium. Secondly, there is the property of extensibility with associated elasticity possessed by the elastic elements of the vascular walls, which not only prevents shock and permanent dilatation and rupture by receiving and momentarily storing energy, but positively promotes the circulation by liberating it again. Thirdly, there is the function of reaction possessed by the muscular elements, which regulate the local pressures and the blood-flow in organs in response to their metabolic activity and maintain the general tone of the circulation. And, lastly, there are the other physiological mechanisms resident in the circulation and its nervous connexions: the myogenic and neurogenic mechanisms of the heart, the vagus and sympathetic supplies to the heart, and the vaso-motor and vaso-dilator supplies to the arteries.

These physiological provisions against the effects of high internal pressure also are exercised at the risk of disablement, automatically developed and automatically increased. Undue exercise of them, in degree or in time, provokes hypertrophy of the muscular elements and an over-growth of the fibrous and elastic tissues, which is entirely conservative or compensatory in its significance—the defensive replacement, or "strain-hypertrophy" of Adami. But the resulting thickening of the wall and narrowing of the lumen from sclerosis and hypermyotrophy increase the stress on the internal surface of the vessel, provoke in turn a further rise of pressure, and establish the necessary conditions of a second vicious circle leading from bad to worse, from fibrous to fatty degeneration—wear and tear in another fashion.

The ultimate result of these actions and reactions between environment and circulation is unfavourable to the circulation. The hypertrophied and fibrosed walls of heart and vessels, though they be hypertrophied and fibrosed as the results of genuine physiological reaction and anatomical repair, are less and less sufficiently nourished, and now yield to the high pressure that the thickening has provoked. Whilst the pathogenetic influences continue, and, indeed, necessarily increase with age, resistance is steadily reduced. The issue can be but in one direction—degeneration with disablement, which ends in death. It appears that damage of the circulation, however small to begin with, necessarily grows and spreads. If we are to delay the fatal issue, to prolong life, to reduce the number of premature deaths from cardio-vascular degeneration, we must work in two directions. On the one hand, we must promote those provisions for resistance, reaction and repair which the circulation possesses so abundantly; on the other hand, we must laboriously seek out the influences that can be proved to damage it, study the manner of their incidence and of their actions, and attempt to anticipate or counteract them. As Professor Humphry said many years ago in his work on Old Age"[1]: "The first requisite for longevity must clearly be the inherent or inborn quality of endurance; of steady, persistent nutritive force, which includes reparatory force and resistance of disturbing effects; and a good proportion or balance between the several organs. The second requisite is freedom from exposure to the various casualties, indiscretions, and other causes of disease to which illness and early death are so much due."

[1] Old Age, pp. 11 and 12.

HIGH ARTERIAL TENSION AND SCLEROSIS.

At the present moment a great body of clinicians and pathologists all the world over are laboriously investigating the problems connected with the blood pressure and the histology of sclerosis and atheroma and the associated changes in the heart. Until these problems have been solved we cannot hope to prolong life, to prevent or remedy premature degeneration. But so much work has been done in these directions that the attention of the profession at the present time may be said to be almost confined to the two conditions—arterial tension as it is estimated instrumentally, and arterial sclerosis. The very attractiveness of the newer methods of investigating the character of the pulse, and the readiness with which thickening of the radial artery can be determined, are unfortunate in this respect—that they encourage incomplete diagnosis. I need not say to you, Sir, and to this learned audience, that something more than "high arterial tension" and "arterial sclerosis" must be reached in the way of a diagnosis in individual instances—if by diagnosis we understand a conclusion on which we are to base prognosis and treatment. The cause, the nature of the pathological process, of which high tension and sclerosis after all are but evidences, must be determined if possible in every case of the kind.

CLINICAL INQUIRY INTO THE ORIGIN OF THE MORBID PROCESSES.

My own work, purely clinical in its character, and involving in every case a definite expression of opinion in respect of prognosis, has necessarily included an inquiry into the origin and beginnings of these conditions of disorder and disease. I confess that I have found it a difficult proceeding to attempt to discover the causes and trace the earliest phases of the morbid processes that end in arterial sclerosis and atheroma and in degeneration of the valves and walls of the heart. A man of 50 comes to us for our opinion and advice. He has lately become conscious of shortness of breath on moderate exertion, of præcordial oppression, possibly of pain across the sternum, extending into one or both arms, on walking to business after breakfast. He suggests that his stomach or liver is out of order, but he obviously suspects that his heart is concerned in the production of the discomfort. Or, instead of such symptoms, the man's complaint is of nothing more serious on the surface than vertigo or insomnia, or rheumatism (as he calls it), or eczema, or of a sense of unfitness for work and fits of depression. These statements and our patient's appearance and age suggest to us that his circulation is either disordered or actually diseased. We find his radial sclerosed, the heart enlarged, with a somewhat diffused shock representing the impulse, and a systolic murmur over the aortic area. The diagnosis is obvious: the man is the subject of arterial degeneration and its effects as far as they have developed. If we were to proceed forthwith to give this man our opinion and advice we should find that we do not possess either the elements necessary for prognosis, or the indications necessary for treatment. To obtain these we must make close inquiry into the patient's whole history, particularly with respect to his occupation and habits, the diseases from which he had already suffered, his constitutional strength and physical training and disposition in earlier years, and, more remote than these, his inheritance. Our purpose is to discover if possible which element or elements in the long chain of events and conditions that have constituted our patient's life may have been, either by excess or by default, responsible for the disorder or disease that has now overtaken him. Experience and our knowledge of the accepted causes of cardio-vascular degeneration enable us to limit these inquiries within moderate bounds. We ask after liability in the family to cardiac disease, and to gout, diabetes and gravel; after the use or possible abuse of athletics in youth; after the acute infectious diseases from which he may have suffered, never forgetting syphilis; after the amount of physical stress and nervous stress involved in his professional, business, or private concerns; and we go

into the details of his indulgence in food, alcohol and tobacco, and his enjoyment of wholesome exercise.

It is laborious, this inquiry into the family history and past personal history of each patient. And I confess that the information one receives in reply is often indefinite and misleading, for example, with respect to gout as distinguished from rheumatism. Sometimes the truth is wilfully concealed, particularly as regards syphilis. Important facts like albuminuria and glycosuria are usually unknown to the patient. The etiological value of certain influences, such as nervous stress, cannot be estimated quantitatively. And, finally, the causation may be so multiple and complex that one cannot disentangle the elements of it—toxic, physical and nervous—and apportion to each its proper share in the production of the disease.

DIFFERENTIAL DIAGNOSIS OF VARIOUS CLINICAL TYPES.

Difficulties like these tempt us to be content with less than the truth, with results unsatisfactory to us as naturalists, and comparatively useless for the purposes of prognosis and treatment in the interests of the patients. I therefore asked myself whether it might not be possible to differentiate the various kinds of arterial sclerosis and cardiac degeneration by their clinical characters. Does each kind of these diseases, according as it is known to be produced—e.g., by syphilis, physical stress, alcohol, and the rest—possess some signs and symptoms so relatively characteristic as to be diagnostic of it, or at least to suggest the etiological diagnosis and indicate the direction in which closer inquiry should be pursued? And, further, are these characteristics of each kind or type sufficiently marked to enable the observer to recognise the respective effects of associated causes—for instance, of syphilis and glycosuria—when they come together in an individual instance?

This consideration suggested to me one direction that such a study as the present might usefully take, and I determined to follow it. I am hopeful that you may allow that the result of my inquiry, which I will now submit to you, does support the correctness of my anticipation that there are different clinical types corresponding with different kinds of cardio-vascular degeneration, which can be and ought to be differentially diagnosed, and that in some instances at least of complex causation they can be disentangled and the respective elements at least duly appreciated.

RELATIVE FREQUENCY OF CAUSES.

But first let me tell you what I have found to be the relative frequency as causes of cardio-vascular degeneration of the influences in our every-day life that are generally accepted as producing it. For the present I will not attempt to classify them nor to suggest in which of the several possible ways they produce or promote degeneration.

In 100 cases of cardio-vascular degeneration taken casually from my records (92 of them men of the average age of 58½ years, eight of them women of the average age of 63½ years, at the date of observation) there was a history of syphilis in no less than 26. Acute febrile processes of extrinsic origin—due to micro-organisms or their toxins (which attack the arterial intima as they attack the endocardium)—are difficult to reckon statistically, for one or other of them has been at work in every individual who has reached middle age. Fifty per cent. in my series had had influenza, typhoid fever, acute pneumonia, or other disease of this order.

A group of universally accepted causes are the disorders of assimilation and metabolism; and of these glycosuria was present in 15 per cent., and gout in no less than 44 per cent. This group of causes brings arterio-sclerosis and cardiac degeneration into further etiological relations—with over-eating, with excessive indulgence in certain elements of food, with insufficient exercise, and still more remotely with nervous depression and habits that provoke indigestion, constipation and malassimilation.

In 31 per cent. of my series I obtained a history of either free or excessive indulgence in alcohol. Tobacco, an exceedingly common cause of cardiac disorder (in rare instances, indeed, of death through the heart), does not, in my experience, produce either enlargement of the heart or thickening of the arteries, and but for its incidental effect on a circulation enfeebled by degeneration of other origin it might be ruled out of the list.

I referred a few minutes ago to the influences of an entirely different class—the dynamic—that fall upon the organs of circulation and damage them when excessive more particularly in middle and advanced life. These are the stresses of a physical kind. Muscular exertion, in laborious occupations, in sport, or by accident, was present in 19 per cent. of the cases in my present series, no doubt usually associated with other possible causes. Allied to the physical stress of muscular effort, but different in being continuous and far more grave in its effects on the circulation, is that form of high intra-cardiac and intra-vascular pressure which goes by the name of "arterial tension." This is a common accompaniment of the causes I have already named, because an effect of some of them, and, as we have just seen, an effect of the sclerosis of arteries and viscera produced by some of them, alcohol especially. I shall be excused from attempting to name a figure of percentage-frequency under this head and that of granular kidney, which, as I have already said, I have excluded from my series.

Almost as difficult is it to satisfy oneself in an inquiry of this description how far nervous stress may be reasonably charged with the production of arterial sclerosis and disease of the heart. I shall return to this question at the proper time; but meanwhile let me say that the great majority of the 100 cases which I analysed for etiological purposes were men working with their heads rather than with their hands, and that in 31 of them such work involved directly or incidentally worry and anxiety sufficient to constitute a complaint.

It will have been gathered from these percentages that in many instances two or more accepted causes fell together; and, as I have said, one of the interests in the study, and one of my objects in the preparation of this communication, was to attempt to distinguish them.

CASES DUE TO "WEAR AND TEAR."

One other point I would discuss here in taking leave of the subject of causation in general. In a small number of instances of cardio-vascular degeneration not one of these influences which I have called its "recognised" causes was found to be, or to have been, at work, unless it were an infective fever. The majority of such subjects were of advanced age, but others had not reached 60. How had their circulation given way? The character of their symptoms and the course of their cases were not those which we connect with the unknown x. It is these cases that I would label "wear and tear." Sir Clifford Allbutt appears to employ this name as synonymous with mechanical stress. Perhaps he would not object to my using it in a more comprehensive sense—to cover "the thousand natural shocks that flesh is heir to," psychical as well as physical. Sooner or later every individual who has escaped greater, irresistible shocks—mechanical injuries, poisons, virulent infections and the rest—yields to the forces around him. Not a single overwhelming event nor several severe attacks, but a series of small, insidious, mostly unperceived actions upon his circulation, of an unfavourable character, as numerous as his own days, make physiological response to the circumstances of life ultimately an impossibility. This is what I would call wear and tear.

The pathological anatomy of this type of case, which appears to correspond with Sir Clifford Allbutt's "decrescent" or "involutionary" form, has been very closely studied during recent years, particularly in America, by several observers, under the inspiring influence and example of our distinguished Member, Professor Adami. They have described to us the manner in which the effects of wear and tear of ordinary life are represented by changes in the different elements of the cardiac and vascular walls. No doubt in some of these instances a family disposition or predisposition can be traced. But let me hasten to add that neither in this connexion nor in any other connexion is inheritance to be reckoned amongst the causes of degeneration. Inheritance concerns the resistance of tissues to the influence of disease; and family proclivity plays its part in the production of cardio-vascular degeneration, not as an essential cause, but as a defect in the provisions for resistance, a defect either in the material or in the mechanism of the organs of circulation.

I will now take up the generally accepted causes of degeneration of the heart and arteries in an order that favours their differentiation, beginning with syphilis.

SYPHILIS.

There are obvious advantages in the selection of syphilis as the first of the recognised causes of cardio-vascular

degeneration to be studied in our present connexion. Syphilis is one of the most common of causes that we have found, occurring as it does in 26 of my 100 cases. It is definitely specific in its nature—that is, due to an extrinsic parasitic influence of known characters. And further, we have no difficulty in finding cases of cardio-vascular disease in which it is the only cause that can be reasonably accepted. For these reasons syphilis is of all the causes of cardio-vascular disease the one that might be expected to present characteristic clinical features and a characteristic course, and to be capable of being identified by its effects even when associated with other causes. How far this is the case will be gathered from a summary of the results of a clinical study of 70 odd cases which I collected and analysed.

FIRST MANIFESTATIONS.

In this series the first manifestations of syphilis at the root of the aorta and in the heart occurred at the average age of 49, 25 years (again on an average) after the primary infection, with a maximum interval of 54 years and a minimum of five years. It is a question of practical interest to us what the condition of the root of the aorta may have been in these cases in the interval between primary infection and the earliest local symptoms. It is highly probable that in spite of its latency clinically—that is, the absence of symptoms—syphilitic aortitis has existed and been slowly progressing in area for years before it declares itself unmistakeably to the patient and the clinical observer. The proper age of aneurysm of the aorta—"the prime," as Sir Clifford Allbutt says, "when muscular stress and syphilis work together"—practically proves this. At the later age which my patients had reached the evidences of syphilitic invasion of the aortic root and the cardiac valves were developed so gradually in the majority of instances—as a rule in the form of presternal oppression on exertion—as to support the same view. When symptoms were suddenly developed, as they were in a few instances, it was clear that they were symptoms of fresh or further damage of already diseased structures.

Thus a retired soldier of 71, with a remote specific history, was suddenly seized with pain in the sternum and at both elbows in stooping to lace his boots. Although he had felt and believed himself to be sound, he proved to have dulness over the manubrium, an aortic systolic murmur, and tortuous thickened radials; and he continued to suffer pain for days, even in bed. No doubt sudden movement and interference with respiration in the stooping posture strained a small area of the arch that had long been diseased. A man of 51, who had had syphilis as a lad and no manifestation of its activity in the interval, was suddenly taken with pain over the manubrium and down the left arm, accompanied by faintness, at the end of a hearty luncheon with brandy and cigars. The pain, once begun, continued to be so severe as to demand repeated doses of morphine, and when I saw him within three weeks of the attack I found a double aortic murmur. And I have known the first manifestation of syphilis of the centre of the circulation to be sudden cardiac failure threatening dissolution, consequent on careless living. Probably sudden death from this disease, so frequent a manner of its termination, may be the first evidence of its existence in some instances.

Notwithstanding such proofs of the existence of syphilis in the walls of the aorta, the length of the average interval that I have named between infection and the first symptoms—25 years—proves sufficiently that the disease is in great measure successfully controlled by the nutritional vigour of the blood and tissues, ready, no doubt, to assert its existence and activity if the general health be lowered or the invaded parts be damaged. Have we any evidence as to the nature of the change that may be developed in the patient's condition or of the incident that may occur to lower the vigour of the local provisions for nutrition that have restrained and localised the action of the spirochæte for 25 years? Almost necessarily it is a cause that is not efficient in earlier years like physical stress; it must be some influence that comes into play about the age of 45 or 50, associated with the habits, concerns and circumstances generally of middle age, and the effect of these on the activity of the processes of general metabolism. I made careful inquiry on this subject in a number of my patients. I found a history of free indulgence in alcohol in 36 per cent. of them, of gout in 27·5 per cent., while 30 per cent. had albuminuria, and 2·5 per cent. glycosuria. To these unfavourable influences have to be added other causes of reduced tissue-resistance that so often characterise middle life, including nervous disturbance in the forms of worry, anxiety and misfortune. In only 10 per cent. of my cases was there evidence of physical stress.

It may occur to some of my hearers that the causes other than syphilis which I have just named as contributory or precipitating, not syphilis itself, ought to be credited with the production of the lesions in the aorta and heart. I hope to prove to you in my next lecture that the pathological effects of alcohol and gout and glycosuria and nervous stress on the vascular and cardiac tissues are so different anatomically from those of syphilis that their true etiological relations cannot be mistaken. The bearing of these facts upon the prognosis and general treatment of syphilitic subjects will be dealt with later on.

SYMPTOMS AND SIGNS.

Coming now to the symptoms and signs of syphilis of the cardio-vascular system as far as the present study extends, let me say at once that they were mainly those which characterise affections of the arch and root of the aorta, including the coronaries and the semilunar valves but excluding aneurysm. Pain was the prominent complaint in more than one-half of the cases (60 per cent.). It was anginal in 30 per cent., præcordial in 30 per cent. Dyspnœa was also complained of in 60 per cent., and palpitation in 57·5 per cent.; faintness or actual faints in 45 per cent.; præcordial oppression in 10 per cent. Cerebral disturbances and other less direct symptoms were variously mentioned.

Of all kinds of cardio-vascular degeneration syphilis presents the most obviously morbid signs on physical examination. In half of my cases I found a systolic murmur over the root of the aorta, more or less well marked; and in no less than 60 per cent. of the same cases an aortic diastolic murmur. Whether with or without a diastolic murmur the second aortic sound was loud and ringing in nearly one-third of the patients. On the other hand, an apical systolic murmur was heard in only one-tenth of all the cases; and in one-half of these it was imperfectly developed. This is a point to which I desire to draw your particular attention as of diagnostic value.

The other physical signs connected with the heart and aortic arch may be said to correspond with those described. In one-third of the cases there was presternal dulness, and in a small proportion mediastinal crepitations. The præcordial dulness and impulse significant of hypertrophy and dilatation of the heart were not always as well marked as one finds in aortic lesions of rheumatic origin; but it must be remembered that patients suffering from cardio-vascular degeneration in the fifth decade commonly have some degree of emphysema and rigidity of the chest which interfere both with palpation and with percussion.

Is there anything in the pulse and other features of the radial artery that can be said to characterise syphilis? Certainly they are not exactly such as we might at first anticipate in one respect—namely, evidences of sclerosis. In more than one-third of my cases the walls were not thickened; and Corrigan's pulse was relatively rare. These characters of the radial artery are another evidence of a fact on which I wish to insist: that syphilis of the organs of circulation is a locally distributed disease; that the radials may be free whilst the aorta is involved; and that clinical evidence to this effect may be sufficient to enable us to diagnose it even if infection be denied by the patient, or if it be associated with one or more other causes. This clinical observation is confirmed by pathological results. Huchard says that syphilis has no great tendency to be generalised, and is more often circumscribed—limited to one or several vessels. Dr. Mott agrees with this statement.

Another conclusion would appear to follow from the soundness of the radial in so many instances of syphilis. The aortic valvular lesions cannot well be of such degree as to disturb the pressure greatly in the peripheral arteries; and in accordance with this conclusion is my observation that the diastolic aortic murmur and—as I have just said—the præcordial impulse are often weak. Other interesting features of the pulse in this disease are its regularity (80 per cent.), considering the severity of the lesions and the age of the patients, and the absence of intermittency. That the

diastolic pressure should be low or moderate in 75 per cent. of cases follows from the frequency of aortic incompetence.

If we now review the clinical characters of this group of cases I believe you will agree with me that they constitute a body of evidence which may substantially serve to differentiate syphilis from other causes of the disease. But you may not be prepared to do so until the character of the other groups have been submitted to your attention and judgment

CLINICAL COURSE.

The clinical course of syphilis of the root of the aorta and heart (excluding aneurysm) is more often slow, but life throughout is entirely insecure, and the duration of the disease when it has become distinctly declared is relatively short. I have made inquiries as to the progress of the cases whose symptoms and signs I have just analysed. The result of the inquiry is full of interest, particularly in its prognostic bearings. Complete records up to the present year in the case of the living, and up to the date of death in fatal cases, were obtained in respect of 48 patients whom I had seen during the previous 13 years. Exactly one-half of them survive and have reached the average age of 55 years. Some are disabled; others are said to be well and at work. The other 50 per cent. have died, at the average of 52 years: 25 per cent. of them suddenly; 21 per cent. from cardiac failure, with dropsy; 4 per cent. with apoplexy; 8 per cent. from aneurysm; 4 per cent. with Bright's disease; and a few from diseases unconnected with syphilis, or obscure, or of undetermined nature.

The average duration of the disease from the date of the first symptoms in the circulation in the 24 patients still living proves to be 4·6 years; in the 24 fatal cases it was 5·3 years. These figures afford striking evidence of the gravity of syphilis of the heart and aorta, and justify my contention that the question of causation should never be neglected in the diagnosis of cardio-vascular degeneration. But let me repeat that the figures are averages only, and represent neither the insecurity of life that characterises syphilis, nor the occasional quiescence of it for a considerable period. From the first recognisable symptom till death the duration in two instances was but a few months. On the other hand, one of the patients still living had his first cardiac symptom 23 years ago.

Once recognised, the disease may be watched pursuing a different course in different cases. Activity, as manifested more particularly by pain, may continue unchecked, the patient being unable to take exercise without suffering. But in the majority of instances treatment based on correct diagnosis comes to his relief for a time. Under complete rest and anti-syphilitic medication, pain is controlled, and presently it disappears, and quiet occupation may be safely resumed. Neglect of precautions is readily followed by an attack of angina, which drives the patient once more to bed. Meanwhile physical examination may reveal the progress of the disease, as it were, anatomically. A diastolic murmur makes its appearance, significant of descent of the syphilitic process on the area of the aortic valves. But, as we saw in connexion with the physical signs, the mitral cusps commonly remain intact. My observations to this effect confirm Sir Clifford Allbutt's statement that in syphilis of the heart and aorta the heart below the aortic valves, save for some endocardial opacities, is healthy. The area of manubrial dulness extends, consequent on aortic dilatation, and other signs and the symptoms of aneurysm of the arch may be developed. In one case, that of a woman, invasion of the mediastinal tissues was traced from its commencement to the sudden death of the patient. In other instances advance moves in the direction of the myocardium—through the coronaries, which are found post mortem to be affected in no less than 71 per cent. of visceral syphilis, according to Hirschfelder. Short of sudden death, the walls of the heart undergo slow degeneration, and the ordinary symptoms of cardiac failure make their appearance. Or the effects of syphilis on the brain, kidneys and other organs complicate the clinical picture, and possibly carry off the patient.

Syphilis obviously is to be classed among the causes that produce disease of the heart and arteries solely by damaging the substance of their walls. There is no question here of high blood pressure being concerned in the production of the primary lesions. But these lesions once produced yield to ordinary, much more to extraordinary, internal pressure; and some of their pathological characters, both destructive and constructive, are thus to be accounted for.

AN ABSTRACT OF

The Samuel Hyde Memorial Lectures

ON

OUTLINES OF MEDICAL HYDROLOGY.

Delivered before the Balneological and Climatological Section of the Royal Society of Medicine on May 15th, 17th, and 19th, 1911.

BY R. FORTESCUE FOX, M.D. LOND., F.R.MET.S.

LECTURE II.[1]

Delivered on May 17th.

MODERN HYDROTHERAPY.

THIS is the branch of medical hydrology which has to do with the use of water solely as a vehicle of energy. The foundations were laid in England by Floyer (1697), Wright (1779), and Currie (1797), whose teaching was zealously followed abroad. The methods of Currie were introduced by Franck into the hospitals of Vienna in 1803, and it is said that the typhus epidemics of 1811, 1812, and 1814 were largely treated by cool baths. The nineteenth century witnessed the popular movement led by Priessnitz (1830), which became systematised as "hydropathy," and may be regarded as a protest, not only against an artificial pharmacology, but against the general therapeutic scepticism to which this pharmacology had led in the middle of the last century. It is evident therefore that the ground was well prepared for the advances of any physical method that appeared to offer a substantial hope of combating disease. Unfortunately, this treatment, on the whole and in most cases, fell into the hands of irregular practitioners, with whom "hydropathy" became an exclusive system, and the profession at large was estranged from its employment. The new system shared the fate of every other system in medicine. It was too systematic to be finally true.

But in Germany, upon the heels of Priessnitz began another and a very different movement. The effects of water upon the human body were for the first time submitted to experimental research. A long series of investigations was commenced, having for their object to ascertain the effects of water at different temperatures, and of mechanical stimulation, upon the circulation, upon the nerve centres, and upon the general metabolism. The *reaction* of the living tissues, and especially the all-important *reaction to cold*, upon which the whole effect of cold baths depends, were now for the first time accurately observed. A beginning was also made in describing the variations of reaction in health and in disease. As a result of many experimental and clinical studies the indications for baths of different temperatures have been provisionally laid down, and rules of practice formulated. Among a great number of workers in Germany and Austria who have contributed to this research Professor Winternitz of Vienna holds the foremost place. At Berlin the "University Hydrotherapeutic Institution" was opened at the Charité in 1901, and placed under the care of Professor Brieger. In 1905 it was incorporated with the University Polyclinic, of which it became the hydrotherapeutic section for purposes both of treatment and teaching. The extent and importance of the practice may be inferred from the fact that last year between 5000 and 6000 persons were there treated. At Munich the Bavarian Government has added a complete and elaborate hydrotherapeutic equipment to the University clinic. Leipsic, Heidelberg, Tübingen, and Jena have also university clinics for hydrotherapy. That of Jena was founded in 1890 and has furnished opportunity for the valuable Text-book of Clinical Hydrotherapy by Mathes.

The establishments for water treatment that have been founded in France and the entire therapeutic procedure have been placed under skilled medical direction. This practice has therefore to a much greater extent than in England taken its place as a recognised branch of therapeutics, especially in chronic and nervous affections. The douche bath, which in its various forms has, as we have seen, been brought to a high pitch of perfection in France, was extensively

[1] Lecture I. was published in THE LANCET of July 1st, 1911, p. 6.

employed by Charcot. It is more than 50 years since the first institutions for treatment of this kind were set up in Paris under skilled medical direction, such as those of Beni-Barde and Keller. There is now a similar provision for medical practitioners in most of the great towns in France, and in many cases suitable baths are attached to hospitals, which are available for the use of all medical men.

In the United States modern hydrotherapy was introduced soon after Currie's work was published, but, as in England, with excesses that brought about a speedy reaction. In recent years the translation of the *magnum opus* of Winternitz (1884) and the valuable work of American writers have brought about a revival of the practice upon rational lines. Dr. Baruch now holds the chair of hydrotherapy in the University of Columbia—the first appointment of this kind in America. Well-appointed establishments have been founded in several cities in America, where baths and other water treatments are given under the observation and direction of trained physicians.

Statements are now made regarding hydrotherapy which are sufficiently striking in their character: that by it we can influence both acute and chronic disease by modifying physiological and pathological processes, not alone in one organ or tissue, but throughout the body, and can check the excessive reaction of acute disorders. In part this is a revival and amplification of older doctrine, of the teachings of the seventeenth and eighteenth centuries. What is new, and cannot fail to impress the candid mind, is the body of research that now lies behind them. It challenges examination and criticism at every point. Is it possible to disregard such a mass of evidence? The best answer to this question would be a complete experimental investigation upon English soil into the properties and uses of waters at different temperatures. We have as yet no Institute of Hydrology in this country, but I do not despair of such a research being some day accomplished.

FORMS OF HYDROTHERAPY IN CHRONIC DISEASE.

Certain forms of hydrotherapy in chronic disease have more particularly come under my own observation. Three distinct phases of treatment may be distinguished according to temperature in relation to the body. First, *plus* applications of heat; secondly, *plus* applications followed by *minus;* thirdly, *minus* applications.

1. *Brief hyperthermal baths.*—For many years I have used and valued these baths in a variety of chronic circulatory conditions. Chief among them is the state of habitual chilliness, and defective peripheral circulation and catarrh, met with in many persons in our country, often young persons of gouty inheritance. The deficiency of bodily heat appears to be conserved by a protective contraction of the peripheral vessels. The blood temperature is subnormal, that of the skin much more so. These are the subjects of internal congestion, intestinal irritability, and catarrh. The abnormal condition of the skin is matched by a corresponding disturbance of the mucous membranes. Such individuals are temporarily cured in a hot climate. They are in the same manner relieved by a course of hyperthermal baths. The temperature of the bath may in many cases be made to increase by daily increments of one degree from 108° or 110° to 115°, 118°, or even 120°. The duration of the bath is from one to one and a half, or at most two and a half minutes. The brief bath gives time for the primary stimulant operation of heat. The secondary and depressing effects that would follow a more prolonged bath are not developed. This practice was suggested to me by the natural hyperthermal baths of Japan. Local hyperthermal baths can be suitably employed in many cases of chronic traumatism, and in arthritis and neuritis where pain and atrophic and degenerative changes are to be attributed to a habitual deficiency of blood-supply.

The following methods illustrate the wide range and therapeutic value of the effects that are produced by minus applications.

2. *The cool or cold douche.*—This procedure is one necessarily of brief duration. It is comparable to the hyperthermal bath, inasmuch as it evokes the primary and stimulating results of thermal applications, but by brevity of application excludes those that are secondary and debilitating. I can add my testimony to that of others who claim for the cool douche a valuable place in the treatment of anæmia, in neurasthenia, and other functional nervous disorders, and to this I would add many cases of degenerative arthritis. It must be remarked that in douches having an appreciable pressure the effects of mechanical excitation are added to those of temperature.

3. *The subthermal douche bath, without pressure.*—I cite this mode of hydrotherapy as one that is but little appreciated in this country, although in my opinion of the greatest value. It is applicable to many of the more serious forms of cardiac disease, in which immersion baths are contra-indicated. The water flows over the patient, seated or reclining, without mechanical excitation, and with a temperature at or about that of the skin. The gentlest massage may be combined with this applicable. The whole effect is to soothe and stimulate the heart's action, and by opening up the peripheral circulation to relieve stasis and unequal distribution of the blood. The good effects of the bath depend on the nice adjustment of temperature and duration, with suitable precautions against fatigue.

POSITION OF HYDROTHERAPY IN ENGLAND.

It is remarkable that whilst modern hydrotherapy has taken a prominent place in the medical practice of nearly every civilised country, in England it is still comparatively unknown to us. It would almost seem that this country has been in two successive centuries so thoroughly inoculated with the empirical virus that it remains immune to the invasion of legitimate science. Here and there methods of hydrotherapy are studied and applied by practitioners, particularly at the mineral spas, but by the general body of medical men they are for the most part ignored, or employed for their patients in the least favourable manner, without the necessary exactitude and under the direction of persons who have received no medical instruction or technical training. Nor is it taught at any of our schools. British medicine cannot compare at present in these respects with the practice of Germany, Austria, Italy, America, and France.

For many years I have been impressed by the need for suitable Institutes of Hydrotherapy in this country. They might well be modelled on the pattern of the baths at Boston, open to the use of all medical practitioners, under skilled professional control, and served by attendants trained in the technique and in the use of instruments of precision. From such institutions the services of the attendants would be available outside for the treatment of acute disease. Within its walls many physicians who have to deal with chronic disorders would find new and unexpected possibilities. And the remedies would be applied, as they should be applied, under their own care and observation. Moreover, the great interest of conducting a course of physical treatment, with the necessary skilled assistance, would stimulate many medical men to independent research, and would in time confer educational value upon an institute of this kind. What I have said applies to most of our large towns, but especially to London.

In the western division of Glasgow there has lately been opened an establishment of medical baths, which are given by skilled attendants and under medical prescription. There is also in London the new Alexandra Institute of Baths which is conducted on similar lines, but I am not aware of any others in this country that are at all comparable to the hydrotherapeutic institutes existing in the other countries to which I have referred.

In many of our hospitals baths are employed, but not, so far as my information goes, to a considerable extent, either for acute or chronic maladies. We have witnessed the zeal with which in late years phototherapy, electrotherapy, radiotherapy, and treatment by massage and movements have been introduced into the hospitals and into general practice. I cast no doubt upon new treatments by entering this plea for a much older one. I am informed that at Guy's Hospital during the last year 43,000 treatments were given in the new department of electrotherapy and actinotherapy. How many of the patients so treated would have derived equal benefit from applications of hydrotherapy given with as much skill and precision? It is no doubt because during recent years we have called in aid so many physical agencies in medical treatment, both for the prevention and cure of disease, that a new hopefulness is abroad. We no longer despair of tuberculosis or even of cancer. We realise that there is a vast field open to us for increasing the resistance of the tissues to pathogenic invasion, and that this is, *par excellence*, the field of physical therapy.

In conclusion, we must acknowledge that there is a mass of evidence that diseased conditions can be controlled by applications of temperature in a watery medium. In our own lifetime there has been gathered together in reference to this subject as goodly a body of ascertained facts as can be found in any department of medicine.

But it may be said, Shall we touch what has been, or may be, in the hands of unworthy professors? Surely the extravagant or irrational use of a remedy should not prevent us from employing it wisely. Is it possible that we are willing to alienate a branch of therapeutics and yield up to the control of others what belongs to ourselves in trust?

Again, it may be said by some—perhaps by the practitioner at the mineral spa—How are we concerned with it? My answer to that is that the study of the laws of hydrotherapy, as we have received it in our generation, is an indispensable preliminary to his work. They form the very groundwork of his practice. Water cannot be separated from waters.

LECTURE III.

Delivered on May 19th.

THE MEDICINAL SPRING.

IN England there is no convenient name for the science dealing with the properties and uses of the medicinal spring—*crénotherapie* of the French, *heilquellenlehre* of the Germans. Health-spring lore must be regarded as a definite self-contained department of knowledge. The faith of mankind in waters rather increases with civilisation, and must be regarded as permanent. The primitive view attributed their virtues, as of all medicinal agents, to miraculous powers, and this belief was fitted to the old doctrine of possession in disease. Later, according to the humoral theory, the action of waters consisted in the elimination of peccant humours. Then with the growth of chemistry came the opinion that waters acted solely in virtue of their chemical ingredients as shown by analysis. This attractive explanation was in turn found not to cover all the facts, for "paradoxical" and "indifferent" waters produced effects out of proportion to the quantity or quality of their ingredients. In short, the known chemical constitution of many springs does not explain their action. We do not know the combination and dissociation of the elements, and the power one may possess in modifying the effects of another. It is believed in France that metals exist in some waters in the colloidal state, and probably act as ferments.

According to another view it is the water only that counts, and the particular qualities of the spring are negligible. This is not in accordance with experience. A bath of the natural water at Buxton produces a certain effect, a similar one at Droitwich a second, and one at Strathpeffer a third. These and such-like exhibit differentia which are superadded to something they have in common. The same remark applies to waters taken internally—at Bath, Harrogate, and Llandrindod. Much importance attaches to the *form* in which the ingredients are presented in solution. It seems that very dilute solutions are sometimes the most active. Jacoby points out that free motility of the particles of matter is essential to active metabolic processes. Water has the property of taking up molecules produced in dissociation, rendering them fluid and mobile and increasing their chemical activity. In many medicinal waters it is supposed that the saline constituents are in a state of complete dissociation (ionisation).

We here touch upon interesting and undetermined questions as to the range of active dosage, and as to the most favourable form of matter for absorption and assimilation. Recent knowledge does not appear to warrant dogmatic statements with reference to the inactivity of minute doses when presented in an assimilable form. The problem of treatment by many drugs is now no longer a question of "how much," but how to get the drug into the tissues, a problem which in my belief is often solved by medicinal waters. The osmotic pressure or tonicity of waters will probably have an important bearing upon their uses in future years. There is nothing to discourage the hope that many chronic tuberculous and pretuberculous conditions might be treated advantageously by hypodermic injections of diluted sea water and other natural salt water. It is premature as yet to attribute particular results to the radio-activity and electric properties of water. The effect of nitrogen and its congeners in waters like those of Buxton deserves further investigation. Carbonic acid gas in medicinal waters, whether taken internally or used as baths, powerfully modifies the action.

MODE OF ACTION OF MEDICINAL WATERS.

The treatment by means of medicinal springs concerns itself only with chronic disorders and morbid tendencies. It resembles the malady in being gradual, and it acts by absorption and by reiterated impression. The double appeal to the mucous membranes and to the skin was well understood by the early physicians. Waters and baths were called in aid for their purgative, diuretic, and diaphoretic effects. Although far from being the whole rationale of spa treatment, increased elimination from the bowel, the kidney, and the skin is an essential part of it. It is founded upon a humoral doctrine which still holds the field. Waters and baths also operate directly upon the circulation of the blood and upon the nerve centres, and so indirectly upon the general nutrition.

In chronic disorders the reaction of the tissues is perverted or inefficient. In place of the effectual reaction in acute disease, reaction is now imperfect, smouldering, and ineffectual. It is particularly for these more or less general chronic tissue disorders, which precede local and acute disease and furnish the soil for specific invasions, that spa treatment has its application. It is possible by the use of waters and baths to restore the healthy reaction of affected tissues. We know that in virtue of their selective or specific actions particular toxins cause a local neuritis, arsenic sets up or removes cutaneous changes, and iodine resolves deposits in connective tissues. By a similar selective action particular medicinal waters operate at the seat of disturbance. A certain striking increase of reaction signalises the conversion of the chronic process into one of a more acute character. As the lecturer has elsewhere shown,[1] this *intensive* action belongs to the natural process of cure, and its production is one of the chief principles in the treatment of chronic disease. *The intensive method* is at the foundation of hydrological medicine. Many waters and baths "bring out" the symptoms. Were this not so, the treatment would often be fruitless. The spa practitioner is concerned to watch these changes of phase, and in order to moderate the new reaction it may be well to combine with intensive and stimulant methods those of a more sedative character.

During the past century a mass of evidence has been accumulated as to the actual conditions in chronic disease, indicating the lines upon which treatment should be applied. It must in future be the aim of the physician to restore the normal resistance to invasion, to promote the elimination of toxins, and to allay nervous irritation and disturbances of circulation. On the other hand, we have a corresponding mass of evidence showing the effects of baths and waters upon nutrition, metabolism, and elimination, and upon nervous and circulatory disorders. From two sides, therefore, light has been focussed upon medical hydrology. Only in our time has it been established: first, that chronic disease depends upon intimate tissue disorders, with consecutive circulatory and nervous disturbance; and secondly, that waters and baths by their eliminative, sedative, stimulant, and intensive actions provide for this class of disorders an adequate treatment. It only remains to secure the recognition of hydrotherapy and the medicinal spring (medical hydrology) by the teaching bodies in the profession.

THE TEACHING OF MEDICAL HYDROLOGY.

Taking the countries as a whole, in France there is one chair of hydrology, and lectures are given by professors agrégés at the various universities from time to time. In Germany there is one chair of hydrotherapeutics, and regular lectures are given in both branches of hydrology at ten of the universities. In Austria and Hungary there is one chair of balneology, and lectures are given in both branches at Vienna, Prague, and Budapest. In Italy there is no chair, but there are "free teachers" at five universities. There are also free teachers in the Universities of Switzerland, Holland, Belgium, and Sweden; and in America there is one chair in hydrotherapy. Most of these educational facilities have been provided within the last 20 years. In general, the subject has not been made obligatory, and lecturers sometimes write "not an examination subject, therefore the lectures are badly attended." But at some universities questions on hydrology are included in the medical examinations. At the

[1] THE LANCET, April 23rd, 1910, p. 1115.

Columbia University hydrotherapy is a necessary part of the curriculum, and at certain universities in Germany.

If we are right in thinking that physical therapeutics, and especially medical hydrology and climatology, have taken, and are destined to hold, a large part in medical treatment, especially in chronic disease, surely it follows that these subjects must be taught as an essential part of a medical education. If it be objected that it is impossible to extend an already overloaded curriculum, it may be questioned in reply whether it is the instruction in therapeutics that ought to be omitted. Has not medical practice already run far in advance of systematic teaching? To point out the entire absence of this teaching from Britain is tantamount to urging the necessity for it. How would it affect the general practitioner? If this practice and teaching were cultivated in Britain it would open to him the resources of scientific hydrotherapy. How would it affect the practitioner at the British health resorts? We need scientists and observers at every health resort, whether a climatic or a hydromineral station. Undoubtedly many of the practitioners at our spas have, to their honour, qualified themselves by scientific studies for their special work. But is it not certain that in future years a medical man duly instructed in hydrology, and holding a British diploma in hydrology, will be a better spa physician than one who has enjoyed no facilities for instruction and qualification in the department of medicine to which his work belongs? It must needs be that the due qualification of the health resort practitioner is in the best interests of the profession at large.

Again, it may be said that there is less need for a chair of hydrology in our country, as compared with France or Germany, because our medicinal springs are comparatively few in number. But London is, or ought to be, in medicine also, the capital of the Empire. Twelve years ago I had occasion to make some inquiry as to the medicinal springs of India, in which I was much beholden to Sir George Birdwood and the late Sir Joseph Fayrer. The conclusion arrived at was that we have in India one of the most valuable and extensive and varied, if not the most valuable, group of medicinal springs in the world, many of them situated in fine climatic stations. I will only mention the Hazaribagh district in Bengal, where the country for more than 100 miles in all directions is teeming with thermal springs at an elevation of about 1500 feet, and the remarkable Tawala Mukhi (Flame's mouth) in the Kangra district of the Punjab. A recent inquiry at the India Office elicits the surprising fact that up to the present time there has been no scientific report made upon the mineral waters of India. The thermal springs of New Zealand form another group of exceptional value and interest, a fact which, I am happy to say, has been recognised by the Government of that colony.

RESECTION OF THE POSTERIOR NERVE ROOTS OF SPINAL CORD.[1]

BY PROFESSOR FÖRSTER OF BRESLAU.

FIRST of all I wish to thank you most sincerely for your kind invitation to this meeting of the Surgical Section of the Royal Society of Medicine. I am conscious of the great honour you have bestowed upon me by allowing me to attend your illustrious assembly. I would also express my deepest gratitude to Mr. Hey Groves for his kind words of welcome. At the same time I feel particularly glad to take part myself in this discussion on the resection of the posterior nerve roots of the spinal cord, since my own researches on this subject have received the greatest stimulus from English workers, especially from the discoveries of Sherrington and Dr. Henry Head. I need not mention before this audience how much we are indebted to Sherrington for all our knowledge of the physiology of the posterior spinal nerve roots, and that the work of Head on the disturbances of sensation in diseases of the viscera represents the most valuable document of our knowledge of the sensory nerve-supply to the internal organs.

Resection of the posterior spinal nerve roots for the relief of pain has already been carried out in the past in a considerable number of cases—e.g., by Abbe in 1888 in two cases of neuralgia of brachial plexus, by Sir Victor Horsley in two cases of severe neuralgia of the arm, by Chipault in five cases of neuralgia of the arm, by Giordano in a case of sciatica, and by Faure in a case of inoperable cancer of the uterus. In three cases of cancer of the spinal column Tietze and I performed resection of the posterior roots in order to relieve the fearful pain which radiated from these roots; but the results were only successful for a short time, since owing to the progress of the disease other roots were subsequently attacked. In 1900 Mingazini suggested resection of the posterior nerve roots in cases of locomotor ataxia with severe lightning pains, but the operation has not been actually performed until recently, when Hildebrand in 1910 cut two cervical nerve roots in a patient suffering from tabes; a relapse occurred. Enderlen performed resection of certain thoracic roots for severe girdle pain. Mr. Hey Groves has to-day reported to you a case in which also the pain remained. Last summer Gottstein and I cut the fourth and fifth lumbar and first sacral roots in a tabetic patient suffering from a perfectly localised neuralgia of the internal malleolus. For some weeks there was complete absence of pain, but afterwards it recurred as badly as before. I am inclined to believe that, if resection of the posterior nerve roots is to be performed at all in cases of tabes with lightning pains, it will be necessary to remove all the roots of one extremity at once, for we never know with absolute certainty which roots are particularly influenced by the morbid stimuli, and there is considerable overlapping of the regions supplied by the different roots. Thus, in our case of tabes the resection of three roots was not followed by any sensory disturbances.

When I suggested performing resection of certain posterior thoracic roots in cases of visceral crises I was influenced by a consideration of the severe pain and symptoms of sensory irritation, which form the basis of these crises, and of the often enormously increased hyperæsthesia of the skin of the epi-, meso-, and hypo-gastrium which accompanies the crisis. In the manner in which patients are wont to describe and localise the pain in gastric crises, and in the abdominal hyperæsthesia, such crises show a marked resemblance to the sensory symptoms observed with certain organic diseases of the stomach, notably gastric ulcer, as well as diseases of the liver, gall-bladder, and intestine. With these diseases, also, marked hyperæsthesia of certain parts of the chest and abdomen occurs very frequently, as has been shown by the classical investigations of Head. I was thus led to the view that the gastric and intestinal crises in tabes were caused by an irritation of the sensory sympathetic fibres of these organs which enter the spinal cord through certain posterior thoracic roots. Supposing this view to be correct, the crises would cease after the resection of these roots. The operation has now been performed altogether 25 times, as shown by the following tabular list:—

25 Cases of Gastric Crises (22 Survived; 3 deaths).

20 successful ... ... 2 not benefited.

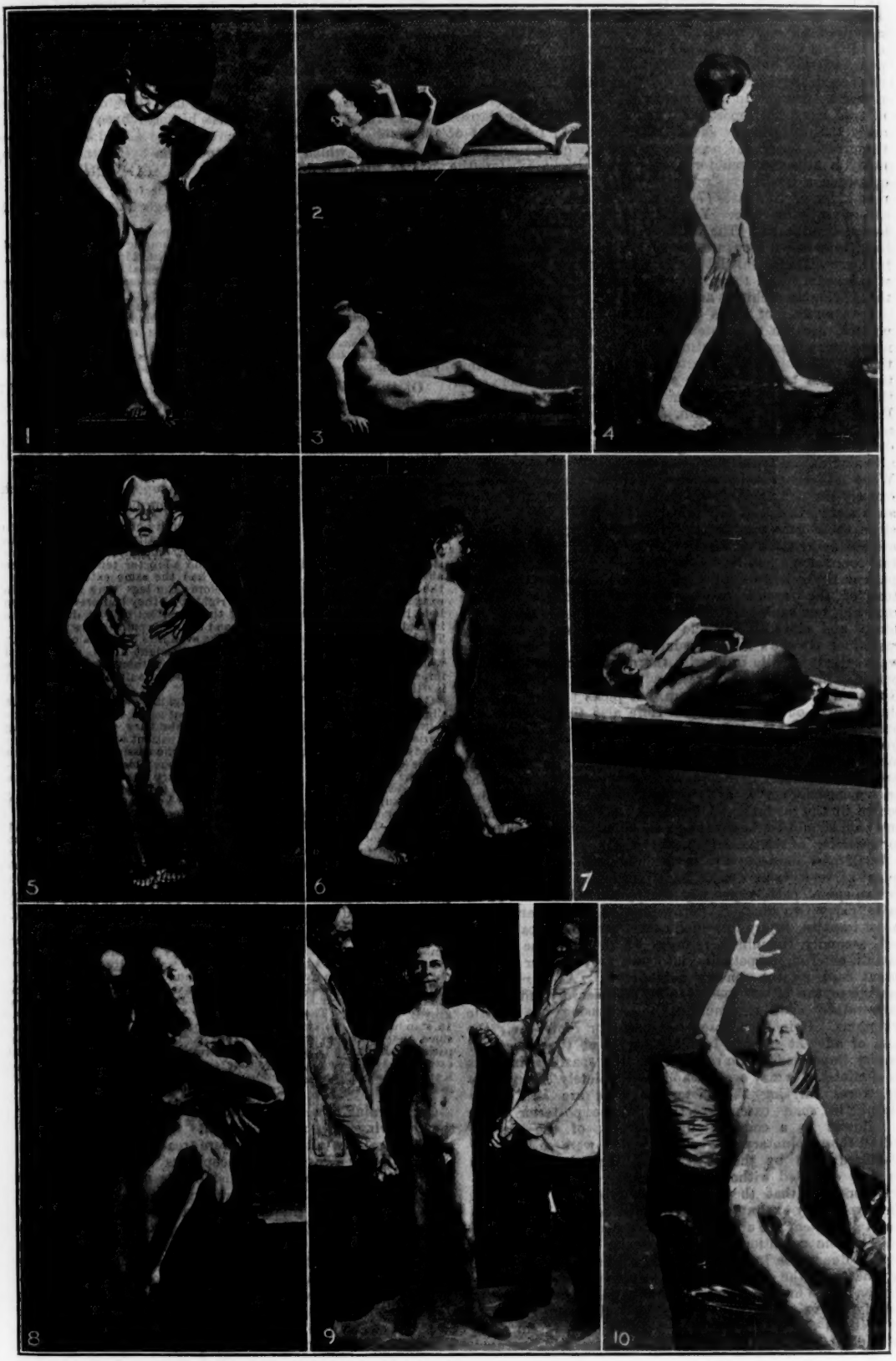
		Interval between operation and publication.
No relapse. 13 cases.	1 Küttner	5 months.
	1 Küttner	1½ years.
	1 Haan	7 weeks.
	1 Goetzel	3 months.
	1 Becker	3 ,,
	1 Guleke	2 ,,
	2 Nonne	Interval not stated.
	1 Sänger	
	2 Sick	
	1 Franke	
	1 Franke	
Relapse. 7 cases.	1 Sauerbruch	—
	3 Tietze-Förster	
	3 Guleke	

Three cases succumbed to the immediate effects of the operation; two showed no improvement, the crises persisting.

[1] A paper read at a meeting of the Surgical Section of the Royal Society of Medicine on June 13th, 1911.

DESCRIPTION OF ILLUSTRATIONS.

Figs. 1, 2, and 3 are from Case 2 before the operation. Fig. 1 is the patient supported in an upright position, showing the adductor spasms. Fig. 2 shows the slight amount to which the leg could be moved, and then only with associated movement of the neck and arms. Fig. 3 is the patient attempting to sit up. Fig. 4 is from the same case after operation, the patient walking with a long stride. Figs. 5 and 6 are from Case 3 before and after operation. Figs. 7 to 10 are from Case 4. Fig. 7, patient lying down with arms and legs flexed and distorted. Fig. 8, the patient supported in the author's arms. Fig. 9, after operation, the patient standing with assistance. Fig. 10, after operation, patient seated and raising one arm with outstretched fingers.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In the remaining 20 cases the operation was successful. Immediately after the resection of the roots the crises disappeared, the body weight increased greatly, and the general condition showed a marked improvement; some of the patients, who until then absolutely had been confined to their bed for some long time, have since regained their power to work. In the majority of these cases (13) no relapse has been reported. The period which has elapsed since the operation is shown in the table. In several of these cases there has been no recurrence of the crises for many months and even for over a year, although before the operation a continuous critical state had persisted. In the remainder of the cases (7) the crises ceased for a while, but subsequently recurred. Yet, even in these, the critical state has not returned. The crises only occur occasionally, at long intervals; they are of short duration and moderate intensity. Among this latter group of cases are three patients who have regained the power of earning their living, one of them being an architect and one a mason.

In a number of cases the result of the operation is not perfect, because the system of roots carrying sympathetic nerve fibres of gastro-intestinal origin is very extensive. By the method which has hitherto been practised of only cutting the seventh to ninth or the seventh to tenth thoracic roots the source of the crises is not always entirely eliminated. Probably the fifth and sixth, as well as the eleventh and twelfth, thoracic roots are also concerned. It is therefore desirable to remove as many of the nerve roots as possible, although naturally this increases the gravity of the operation. What is even more important is in every case to determine exactly the situation of the pain, the extent of the hyperæsthesia of the skin, and the site of its maximum intensity, since these data may possibly afford a guide which roots are chiefly irritated and concerned in causing the crises. In this connexion a publication by Guleke is of interest; in one patient the crises disappeared for a time after the resection of the seventh to the ninth thoracic roots. They recurred, but again disappeared after the resection of the tenth and eleventh thoracic roots. For such extensive resections Guleke's method would appear to be particularly well suited. While ordinarily the dura is opened and the posterior thoracic roots are resected close to the spinal cord, Guleke does not open the dura, but picks up the roots in their course outside the dura. Here also the anterior and posterior roots are enclosed in separate sheaths separable from one another with comparative ease. The posterior roots are then cut. We must, however, bear in mind that gastric crises may possibly arise from irritation of the pneumogastric nerve, and perhaps even of the vomiting centre in the medulla. All cases of gastric crises without any pain should be regarded as suspicious and as unsuitable for resection of the posterior nerve roots.

I will now discuss the value of resection of the posterior spinal nerve roots in spastic paralysis due to disease of the cortico-spinal path, especially the pyramidal tract. These paths carry two kinds of fibres—firstly, those bearing the motor impulse, injury to which causes paresis or paralysis; and, secondly, the inhibitory fibres which check the sensory stimuli entering perpetually into the grey matter of the spinal cord by the sensory nerve roots. As a result of damage to the latter class of fibres the sensory afflux acts unrestrained upon the muscles, thus causing the spastic symptoms. If in such cases the posterior roots—i.e., the path of afferent sensory impulses—are cut, the excess of sensory impulses is again reduced and the spastic symptoms are diminished or may even disappear completely. Frequently the fibres carrying the motor impulses are still fairly intact; in such cases resection of the posterior roots is followed by a complete disappearance of the spasms, and all those voluntary movements which were so seriously interfered with by the spastic resistance of the muscles are now executed without any difficulty. We may therefore conclude that the operation can only be successful where voluntary excitability of the muscles is still present to a certain extent. Further, this treatment can only cure those spastic conditions of the muscular system which are actually due to the influx of excessive sensory stimuli to the grey matter of the cord—i.e., only in true reflex spastic contraction of the muscles; on the other hand, resection of the posterior nerve roots cannot be successful in the muscular contractions of athetosis, chorea, mobile spasm; for this latter class of diseases, which have so often been confused with the former, are due to the direct pathological stimulation of motor centres and paths belonging to the cerebrum and mid-brain; they are therefore comparable to the epileptic convulsions which arise from a corresponding irritation of the motor centres of the brain. Resection of the posterior roots cannot eliminate the pathological stimulus of these centres. In all such cases it has therefore proved unsuccessful. The operation has hitherto been performed in 58 published cases, to which must be added 4 unpublished cases, 3 of which were operated upon by Küttner and 1 by Tietze, giving a total of 62 cases.

61 Cases of Spastic Paralysis (56 survived; 5 deaths).

37 cases of congenital spastic paraplegia (Little's disease): 36 successful; 1 not benefited.
3 cases of acquired cerebral spastic paraplegia: all successful.
4 cases of spinal spastic paralysis of traumatic origin: 2 successful; 2 not benefited (1 case wrong roots divided, 11 Th., 12 Th., 1 L.; 1 case complete interruption of the cortico-spinal tracts).
1 case of spastic paraplegia from compression of the spinal cord (Pott's disease): successful.
2 cases of syphilitic spastic paraplegia (Erb): successful.
1 case of primary spastic paraplegia (? Erb-Charcot): successful.
2 cases of disseminated sclerosis: 1 case not benefited; 1 case successful, disease rapidly progressing, death.
7 cases of spastic paralysis of the arm: 5 cases benefited; 2 cases not successful—complete interruption of the cortico-spinal tract.

Of these, 5 died as the result of the operation and 57 survived. 38 of the survivors were cases of congenital spastic paraplegia (Little's disease); almost all these patients have been benefited by the operation, some of them showing a very marked improvement. I should like to demonstrate to you in pictures the extent of this improvement in some cases. The patients in question were operated upon by Küttner and myself, a part only of these cases having been published.

CASE 1.—Boy, aged 7 years. Severest rigidity of the limbs; unable to make the slightest voluntary movement, to sit, stand, or walk; the patient lies in bed like a log. Preliminary orthopædic treatment consisting in tenotomy of the Achilles and adductor tendons had been absolutely of no avail. The rigidity had the same extent as before; the paralysis was as complete as before; the legs were now held in extreme abduction with the same rigidity as they had previously been held in adduction. The result of the operation of root division was immediate cessation of the spasms and the return of voluntary motility. The boy now moves his legs freely; he even lifts one leg alone without any assistance; he can stand erect with straight knees, unaided, and walks quickly and safely on two crutches without any help. The improvement was maintained under the use of suitable exercises, and is still going on.

CASE 2.—Boy, aged 11 years. Severest rigidity; was able to carry out slight voluntary movements of the legs, but could only bend both legs a little at the same time, considerable subsidiary movements being carried out with the arms and head. The patient was quite unable to stand or to walk, and could not sit up even when assisted, the resistance of the extensors of the pelvis being insurmountable. After the operation the rigidity quite disappeared; voluntary movements of the legs are carried out freely, the patient being able to bend each leg by itself, to lift it up high without also bending the knee- and ankle-joint, and to sit, stand, and walk alone with long strides. (Figs. 1, 2, 3, and 4.)

CASE 3.—Boy, aged 10 years, with severe rigidity of the limbs and contraction of the flexors. Motility as in the previous case; the patient was unable to sit, stand, or walk. After the operation the spasticity quite disappeared and perfectly free motility was obtained, the patient being able to bend each leg independently or to lift it high up, and to abduct the legs widely; the patient stands and walks alone with long steps; he bends the leg well in walking and steps well forwards, mounts stairs without fatigue, and is out alone in the open for many hours. (Figs. 5 and 6.)

CASE 4.—Unpublished case. Severest spastic paralysis of all four limbs, the figures showing how arms and legs were inextricably interlocked, as it were, in a tangle. The patient was totally unable to carry out any voluntary movement, lay in bed huddled up, and, in addition, suffered from athetosis. Root resection was carried out here, both in the lumbo-sacral and the cervical part of the cord. The spasms were greatly improved. The patient can now lift up each leg separately. In standing and walking he has still to be supported on both sides, since the operation was carried out comparatively recently. The patient voluntarily lifts each arm up high, and can use his hands in eating and drinking. In another similar case of spastic diplegia Küttner has performed resection of the cervical, as well as the lumbar roots too, with success. (Figs. 7, 8, 9, and 10.)

On returning to a consideration of the table we next find the following cases: three patients with acquired cerebral spastic paralysis, all of which were treated successfully, one of them being a case of hydrocephalus with severe spastic paraplegia. There is also a considerable number of cases of spinal disease with spastic symptoms. Of 4 cases of spinal spastic paralysis of traumatic origin 2 were successful; of the remaining 2, which were failures, in one wrong roots were cut, whilst in the other the cortico-spinal fibres appear to have been completely interrupted; in this case the spasms disappeared, but voluntary motility did not return. In addition there was 1 case of Pott's disease which was successful; also 2 cases of syphilitic spastic paraplegia (Erb), successful; 1 case of primary spastic paraplegia (Erb-Charcot), successful; 2 cases of disseminated sclerosis, one of which was not

benefited, whilst the other was at first successful, but subsequently the disease progressed rapidly and the patient died. Of 7 cases of spastic paralysis of the arm 5 were successful—one of these being Case 4 already demonstrated. The remaining two were not benefited owing to complete interruption of the cortico-spinal paths; in these patients the spasms disappeared, but voluntary motility did not return. These are the cases, to my knowledge, mostly published hitherto. To these must be added the three cases which Mr. Hey Groves has reported to-day.

There remain still a few points to which I would call your attention. As regards the indications of the operation I must in the first place repeat, that only lesions with real reflex spasticity, as the result of the loss of the cortico-inhibitory fibres are suitable, but not the diseases of the type of chorea, athetosis, mobile spasms, and spasmodic torticollis; possibly, however, Parkinson's disease may be suitable. Secondly, there must be a reasonable prospect of innervating fibres of the pyramidal tract still existing, all cases with slight spasms and considerable paralysis being unsuitable. In cases of severe spasms and total voluntary paralysis there may remain a considerable amount of voluntary excitability, only obscured by the spasms and only apparent after their elimination. In such cases the experiment is worth trying. The question whether any voluntary motility remains may be decided by preliminary injection of stovaine, which temporarily removes the spasms. The arm, as a general rule, is less suitable than the leg. Thirdly, the disease must have become practically stationary, whilst progressive diseases like disseminated sclerosis are hardly suitable, very slowly progressing ones, like spastic spinal paralysis, being perhaps more promising.

The second point to which reference should be made is the after-treatment of the patient. Good results can only be obtained with very careful exercise treatment. It is only by such exercises that voluntary motility is brought up to its highest level, and that, above all, standing and walking are gradually rendered possible. Such exercises should be continued for years, during which continuous progress may be observed. The assistance of orthopædic measures cannot be dispensed with; above all, it is necessary to place the limbs in removeable plaster splints in such a position as to correct the previous deformity, the legs in abduction, extension and outward rotation, the knees in extension, the feet in dorsal flexion; the arms in abduction, the forearms in extension, the hands in supination and extension, the fingers in extension, the thumbs in opposition. These positions are required during the whole time immediately following the operation, the limbs being only removed from their plaster cases for the purpose of the exercises, which should be carried out several times a day; later they should still be kept in the splints at night. If beside the real spastic contractions there are also organic contractions due to shrivelling of the muscles and tendons, tenotomy or tenoplasty may also have to be performed.

As to the technique of the operation I am fully convinced that Mr. Hey Groves's proposition for the use of adrenalin is of the greatest importance, as the bleedings often assume a threatening character. It seems to me also that his method of cutting the roots nearer to the spinal cord simplifies the operation, although it renders it more difficult to distinguish the different roots.

In conclusion, let me thank you for the kind attention with which you have honoured me and the leniency you show me for my inefficient use of your tongue.

Note.—A full list of references is appended to the articles by Professor Förster and Mr. Hey Groves in the Proceedings of the Royal Society of Medicine.

Dr. W. J. Seward, medical superintendent of Colney Hatch Asylum, has resigned his position as from the end of September next. Dr. Seward has been connected with the asylum for more than 33 years, first as an assistant medical officer, then from January, 1882, as medical superintendent of the male department, and since May, 1890, as medical superintendent of the whole asylum. The sub-committee of the asylum has expressed its appreciation of Dr. Seward's services and of his care and anxiety for the patients' welfare.

ON THE DIVISION OF THE POSTERIOR SPINAL NERVE ROOTS:

(I.) FOR PAIN; (II.) FOR VISCERAL CRISES; (III.) FOR SPASM.[1]

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SINCE Abbé in 1888 first divided the posterior spinal roots for the relief of intractable pain the number of cases recorded of this operation has been remarkably few, but in quite recent years Förster has given a new stimulus to the subject by his suggestion that the scope of the operation may be extended to the treatment of such diverse conditions as visceral crises and spastic contractions. With the exception of isolated cases reported by Bennett, Horsley, Head, and Morton Prince there has been practically nothing written on this subject in England. And yet from both the physiological and the clinical standpoints it is one of great interest and importance. For on the one hand it demonstrates and to some extent elucidates the complexities of the problems of pain, whilst, on the other hand, it offers a cure for certain disorders which are otherwise almost intractable. Strangely enough, the division of the posterior spinal roots has given the least satisfactory results in those very cases where we should have expected it to have been the most efficient—i.e., in the relief of pain—whereas in symptoms with which it is much more remotely connected it has never failed to yield some measure of success.

I have to report six cases of posterior root resection, and I will preface my remarks on each subdivision of the subject by a short description of the personally observed cases which illustrate it.

SECTION I.—*For Pain.*

CASE 1.—Patient, aged 50 years. As he has always been of very methodical habits, and has kept a diary, the history of the onset of his symptoms is exceptionally precise and reliable.

History.—January, 1896, first noticed the loss of sensation in the left foot. February, 1896, first had pain in the left foot. September, 1897, the left foot swelled suddenly. November, 1897, first noticed lameness. Occasional pain noted in the right leg and foot. March, 1898, swelling of the left knee. From May, 1898, to August of the same year was an in-patient at the Queen's-square Hospital for Paralysis, London, under the care of Dr. J. A. Ormerod. Then for the first time he had difficulty in micturition. For the next ten years the pain continued without much alleviation, occurring in severe paroxysms once or twice a week. It has always been most severe in the left leg from above the knee to

FIG. 1.

Diagram depicting Case 1, showing areas of anæsthesia. The small crosses show the margin of loss of pain sense, and the broken lines the margin of loss of tactile sense.

[1] A paper read before the Surgical Section of the Royal Society of Medicine, on June 13th, 1911.

the extremity of the foot, but the right leg has also been the seat of a good deal of pain. Since 1898 he has only been able to walk with the help of crutches because of the pronounced ataxia and the deformity of the left foot and knee.

Condition prior to operation (August, 1909).—He is a heavily built man, well nourished and perfectly healthy except in respect to the nervous system. Left leg: The knee is much swollen, measuring 22½ in. in circumference (as compared with the right, which is 15 in.). There is much bony thickening and free fluid with several large loose bits of bone. An extreme valgoid position is present at the knee amounting to about 30°, whilst there is nearly 15° of lateral mobility. The left foot is also in the condition of a typical Charcot's joint, being flattened, everted, and deformed. The pain, which is present in both legs, is much worse in the left, feels as if it were in the bones, is liable to sudden and severe exacerbations about every third day which last about seven to eight hours, generally at night, and is more relieved by antipyrin (30 gr.) than by any of the other innumerable things which he has tried. The sensibility to tactile, painful, and thermal stimuli is greatly impaired in both legs. The impairment of sensation in the left leg extends almost to the groin, in the right to the knee. The loss of sensation amounts to a dulling of perception with great delay, but not to absolute anæsthesia.

Laminectomy, August 16th, 1909.—The ninth dorsal spine was first removed in order to allow the turning up of a large osteoplastic flap, containing the tenth dorsal to the first lumbar laminæ, inclusive. After opening the dura it was found necessary to take away the second lumbar lamina as well in order to gain sufficient room. About a centimetre was resected from each of the following posterior roots on the left side—viz., the third, fourth, and fifth lumbar, and the first, second, and third sacral. For three days after the operation the patient had very severe pain, chiefly in the left foot, which required ¼–½ gr. morphia to be repeated twice a day. The bladder had to be emptied by catheter from this time onwards until the patient was able to get up.

Excision of the left knee-joint, August 30th, 1909.—The disorganised joint was excised, many large loose pieces of bone were removed, and the femur was united to the tibia by means of a mortice joint. The operation, which lasted one and a half hours, was well borne, *without any anæsthetic*, either local or general. After it was over the patient was a little pale and complained of feeling tired, but otherwise he had no sensation of discomfort from the operation. The wound healed by first intention with a good firm fibrous union between the bones. Osseous union was prevented by the strong contractions which were constantly taking place in the leg muscles.

Recovery from the operations was uneventful except for an unfortunate attack of suppurative parotitis on the left side which required an incision. The patient returned home on Oct. 21st, 1909. He had a small pressure sore on the left heel which was somewhat slow in healing. On two occasions the actual cautery was applied to this without causing him any sensation.

Present condition (February, 1911).—I have asked the patient to give his own opinion as to his present condition and the benefits he has derived from the operations. He writes: "The pain in the left leg has certainly been much less severe than previously. There has, however, been pain, though more of the gnawing than of the shooting description. I suffer enough, though, still to make life rather a doubtful blessing, and without heroin and antipyrin I hardly think I could go on with it. I do not think I would undergo the operation again ....., but if I had to do so would have it done *on both legs*. It has not affected my locomotion at all. If the pain I experience in my right leg were modified as it has been in the left, it would not then be unbearable. I only wish that the nerve operation could have been as successful as that of straightening the leg was." From an objective point of view, the left leg has lost sensation completely right up to the fold of the groin and round the iliac crest. (Fig. 1.) Tactile, painful, and thermal sensations are all quite absent over the whole of this area, but that of tactile sensation is not quite so extensive as that of the other two forms by an area of about two inches. The limb is well nourished and shows no muscular wasting, but he has on several occasions had some superficial ulceration between the toes, which has healed readily under ordinary treatment.

CASE 2.—The patient was a married woman, aged 30 years, with four children.

History.—In 1907 the patient had a severe attack of puerperal pyæmia which necessitated several operations for the opening of abscesses, the largest of which was over the left iliac crest, and was associated with partial necrosis of that bone. In the beginning of 1909 she had phlebitis in the left leg with a large indolent ulcer over the shin. This was the beginning of the pain, which has continued ever since. By the autumn of the same year the pain had become so unbearable that she begged to have the limb amputated.

First operation, Oct. 8th, 1909.—Laminectomy; division of posterior nerve roots. The eleventh and twelfth dorsal and first lumbar laminæ were removed, and the roots of the fourth and fifth lumbar and first, second, and third sacral nerves on the left side were divided. The patient had a good deal of pain in the back and left leg for about a fortnight after this operation, but was then much easier for a month. However, as very little loss of sensation could be detected in the left leg, it was feared that the division of the nerve roots must have been incomplete. This was confirmed by a speedy return of the pain in all its former intensity.

Second operation, Dec. 8th, 1909.—The lumbar enlargement of the cord was exposed by opening the former scar, cutting through very dense cicatricial tissue. This gave a much more bloodless field of exposure, and it was found that in every case some of the nerve filaments had been left to each divided root. These were now completely resected. After this the leg was absolutely anæsthetic to within one hand's breadth of the groin. No painful, tactile, or thermal impression could be felt in any part of this area, nor had she any idea of the position of the limb. On first attempting to walk, the leg was thrown about in the most wildly ataxic manner, but this slowly improved in time.

After-history.—For some few weeks the patient had relief from pain, but it then began to be as bad as ever. The pain nearly always began at night, and continued for many hours, making the patient roll about in agony and threaten to take her life. She said she felt as though the pain was driving her out of her mind, and this fear proved to be well founded, and she had to be removed to the Fishponds Asylum, where she remained from April 22nd to Oct. 3rd, 1910. For about one month of this time she was wildly maniacal, and she had to be kept in the padded cell. Her mental condition slowly improved, but the pain in her leg never wholly left her. On returning home she became much worse, and I admitted her again to the hospital for observation in January, 1911, but again she had to be taken to the asylum, where she remained until April. During both attacks of insanity the pain in the leg was better; then, after she had been discharged from the asylum, where she had been getting good food and fresh air, and had returned to a poor home, where she had every encouragement to ill-health, the pain would begin again.

Judging from *a priori* arguments we should certainly have supposed that in the section of the posterior spinal roots we have a certain means of curing peripheral pain. And yet we have the very remarkable phenomenon of complete and lasting analgesia associated with a continuance of a subjective feeling of pain, and it is easy to satisfy one's self that this result is the general rule and not the exception in similar instances recorded in the literature.

Among the 16 cases collected by Jacobi[1] in 1907 there are only six in which the pain is said to have been completely cured. In six others there is said to have been great relief, and of the remainder there is a significant silence about the after-results.

Knapp[2] has recorded two cases. The first was that of a man, aged 40 years, an alcoholic, whose leg was amputated in 1890 for trauma. Then during the next five years he had several excisions of the stump and of the bulbous nerve ends for pain, and finally, in 1896, the posterior roots of the sacral plexus were divided, but he died from shock. The second was that of a man, aged 25 years, in which amputation of the right arm below the elbow on account of a severe crush was performed in 1898. Great pain in the stump required four operations for the removal of bulbous nerve ends. The nerves were injected with osmic acid; the limb was amputated higher up with no avail. In 1899 he was nervous, hysterical, and generally wretched. In 1902 the sixth, seventh, and eighth cervical and first dorsal right posterior roots were resected. He was free from pain for some months and then became as bad as ever. Two years later he developed spastic paraplegia, and at that time and up to 1907 the original pain was as severe as ever, although the cord was re-exposed and the division of the nerve roots assured.

Chavaunaz[3] relates the case of a man, aged 68 years, who had severe intercostal neuralgia on the left side from the axilla to the mamma, which persisted in spite of excision of the corresponding intercostal nerves. The posterior roots of the first to the fourth dorsal nerves on the left side were resected, but the result was only "some amelioration, but not cure."

Hildebrand[4] recounts three cases. 1. A woman, aged 48 years. Luetic neuritis of arm, which was relieved by no medicines. The roots of the seventh and eight cervical nerves were cut on Feb. 23rd, 1910. Relief for a time, but the pain soon returned. A second operation on April 16th. Divided the sixth cervical and first dorsal roots, but sudden death occurred at the end of the operation from heart failure. 2. A man, aged 62 years. October, 1909, pain in right hip, thigh, and leg, with some muscular wasting. Arterio-sclerosis, œdema, and cyanosis of feet. Operation June 1st, 1910. Laminectomy of first to fifth lumbar vertebræ; resection of right posterior roots. Pain temporarily relieved, but by July 15th it had recurred as badly as ever in the right leg. 3. A woman who had been operated on seven years before for breast cancer. Metastatic growth in left brachial plexus, severe pain in arm. Operation July 16th, 1910; laminectomy with resection of posterior roots, fifth to eighth cervical and first and second dorsal. Good recovery. The patient declared she still had pain. This was considered to be due to the fact that she still craved for morphia.

These are all the cases of this kind that I have been able to collect from the literature, and they are enough to show pretty clearly what the general results have been. Some analysis of the details of the 24 cases included in Jacobi's list and those I have added may serve to emphasise the points of importance.

Sex.—17 males, 6 females; in one case the sex is not mentioned.

Age.—In 19 cases only is the age given, and the average is 41 years The oldest was 68 and the youngest 15.

[1] Jacobi: New York Medical Journal, 1907, p. 192.
[2] Knapp: Boston Medical and Surgical Journal, January, 1908, p. 149.
[3] Chavaunaz: Gazette Hebdomadaire des Sciences Médicales, 1905, xxvii., p. 369.
[4] Hildebrand: Langenbeck's Archiv für Chirurgie, 1911, 94, ii., p. 203.

Exciting causes.—Mentioned in 10 cases: tabes, 1; cancer of brachial plexus, 2; pyæmia, 1; trauma, 4; syphilitic neuritis, 1; and athetoid paralysis, 1.

Region affected.—Arm, 15; leg, 6; intercostal areas, 3.

Immediate result.—Death in 4; recovery in 20.

Late results.—Complete cure of pain, 6; moderate or partial relief, 6; failure to relieve the pain, 3; not mentioned, 3; died within a few weeks (the two cancer cases), 2.

Nervous and mental sequelæ.—Moderate degree of Brown-Séquard paralysis, 1; spastic paraplegia (occurring some years after operation on the brachial roots), 1; morphia habit, 3 (acquired before the operation); insanity or other severe neurosis, 3.

The point of the greatest interest in these cases is the failure of the resection of the posterior nerve roots to cure the pain in the corresponding areas in about 75 per cent. of their number. A certain number of these cases may be accounted for by supposing either that not enough of the roots have been divided or that the division had been incomplete. But probably the majority are not susceptible of this explanation, and those I have related are among such, for in both these there was the most absolute loss of every kind of sensation, so that one patient could have his knee-joint resected without an anæsthetic, and yet pain is still referred to the same area. It is easy to understand that the relief from pain would not be immediate or that it might for a time be increased, as it usually is, but when the nerve tracts in the spinal cord have had time to degenerate it is hard to understand where the pain comes from. In the case of facial neuralgia the removal of the sensory ganglion or the division of the root of the fifth cranial nerve proximal to that ganglion causes immediate and lasting freedom from pain. Why is the result different when the neuralgia is in the area supplied by the spinal nerves? In some cases—e.g., the second which I have related—the pain is evidently of a psychical origin, and in her case it alternates with absolute insanity.

From a practical point of view it is clear that we must give a very guarded prognosis as to the results likely to be obtained by the resection of the posterior nerve roots for the cure of pain. But it is certainly a more rational and more hopeful proceeding than that of amputating a limb, for the former may cure, it often relieves, and it does not mutilate, whilst the latter never cures although it involves the sacrifice of a member.

SECTION II.—*For Visceral Crises.*

CASE 3.—A labourer, aged 34 years. Symptoms: pain, emaciation, and vomiting.

History.—The patient had always been healthy until two years ago, when he first began to suffer from vomiting and loss of flesh. For the last few months he has had daily lavage of the stomach, which has given him some relief. I saw him with Dr. C. W. M. Grier at Mevagissey, and we diagnosed his condition as being due to some form of pyloric stenosis. I admitted him to the Bristol General Hospital on August 1st, 1910.

FIG. 2.

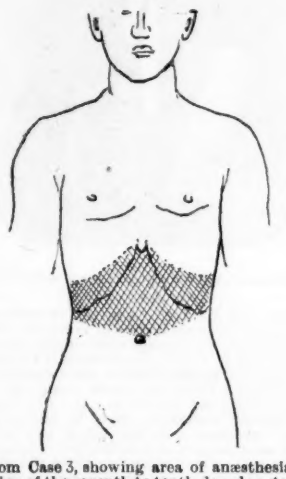


Diagram from Case 3, showing area of anæsthesia resulting from division of the seventh to tenth dorsal posterior roots.

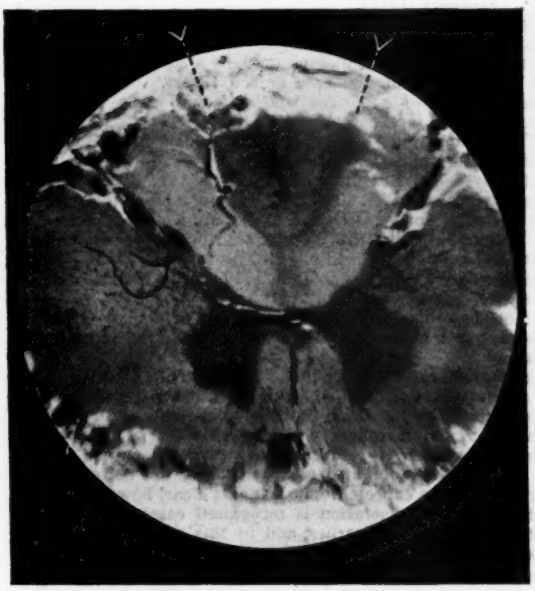
Condition.—The most notable thing about the patient was his great emaciation, he seemed to be a walking skeleton, weighing only 85 lb. He vomited several times a day, and had a great deal of epigastric pain. The stomach was dilated and displaced downwards to one finger breadth from the navel, and splashing could always be elicited over the organ.

First operation.—August 2nd, 1910. Gastro-enterostomy. The stomach was dilated and prolapsed, so that the pylorus appeared to be kinked. There was no evidence of ulcer or new growth. The usual posterior gastro-enterostomy was performed. He derived no benefit from this proceeding, but was as sick as before. About a fortnight after he complained of severe shooting pains in his legs, which suggested the idea that he might have tabes. Further examination by Dr. Carey Coombs confirmed this. There was an absence of knee-jerks, Argyll Robertson pupils, and Romberg's sign. The pain which I had mistaken for indigestion was in reality a girdle pain due to tabes.

Second operation.—August 26th. Laminectomy, fifth to eighth dorsal vertebræ; resection of the posterior dorsal roots, seventh to tenth inclusive. (Fig. 2.)

After-history.—For a few days the patient had increased pain, but this quickly subsided, and he was free from vomiting except for one or two occasions after the operation. He took his food well, but though on full diet he never gained flesh. This was largely due to the fact that he had several large loose actions of the bowels daily, which no kind of medication had any effect in arresting. He died quite suddenly on Sept. 21st, although at this time he was well enough to get up each day and go out of doors.

FIG. 3.



Section of cord in cervica region from Case 3. V V show the degeneration in the posterior columns.

Necropsy.—This was performed by Professor E. Emrys-Roberts. Nothing abnormal was found apart from the condition of the nervous system and the extreme wasting. The gastro-enterostomy junction was firmly united. The laminectomy wound was soundly healed.

Structural changes in the cord.—I am greatly indebted to Dr. A. Rendle Short, the senior demonstrator in physiology at the Bristol University, for a most careful examination of the cord. The dorsal and cervical regions show the degeneration of the posterior columns which results from the resection of the posterior nerve roots in the dorsal region. Many of the cells of the anterior horns of the grey matter in the dorsal region show marked chromatolysis. (Fig. 3.)

The idea that the gastric crises of tabes might be cured by division of the posterior nerve roots of the spinal segments governing the stomach is due to Professor Förster[5] of Breslau, who with Professor Küttner carried out the first operation of this kind in 1908, with very marked success. The patient was a man, aged 47 years, who had suffered from severe gastric crises since 1902, with great pain and almost incessant vomiting. He was worn to a shadow and was addicted to morphia. All kind of medicinal and electrical treatment had been unavailing. On Dec. 31st, 1908, the laminæ of the fifth to tenth dorsal vertebræ were removed, but the dura not opened. The pain and vomiting became much worse. On Jan. 1st, 1909, the sixth to tenth dorsal posterior roots were resected on both sides after opening the dura. After this the pain and vomiting absolutely ceased, and the patient gained weight rapidly. He

[5] Förster and Küttner: Beiträge zur Klinischen Chirurgie, 1909, 63 ii., p. 245.

died from phthisis nine months later, but had no return of the gastric crises.

Förster and Küttner's second case was that of a man who had become greatly weakened by the morphia habit. He died a few hours after the operation. Their third case was that of a man who had had two previous operations on the stomach, including a gastro-enterostomy. The sixth to eleventh dorsal posterior roots were divided on both sides and the patient has completely recovered his health, and this continues until the present, nearly two years after the operation.

Bruns and Sauerbruch's case[6] was that of a man who for several years had had gastric and intestinal crises of increasing severity, so that before the operation he often had fæcal vomiting. The seventh to ninth dorsal roots were divided with an excellent result. However, he suffered a relapse six months later, brought on by alcoholic excess. He subsequently recovered, so that he is now able to resume work (February, 1911).

Moskowicz's[7] first case was that of a man, aged 46 years, who for three years had had gastric crises. The resection of the posterior roots was followed by a cure which lasted for six weeks from the date of the report. His second case was that of a patient who died two weeks after the operation from sepsis of the wound.

Thomas and Hall's[8] case was that of a man, aged 32 years, with a history of gastric crises of eight years' duration. The patient's weight had dropped to 100 lb. He had the symptoms typical of tabes. In 1905 he had a laparotomy with the freeing of some gastric adhesions, but derived no benefit. On March 3rd, 1910, the seventh, eighth, and tenth dorsal roots were cut on both sides. He was relieved of the crises until the date of the report, July, 1910, but he had not cured himself of the morphia habit.

Hahn has had one very successful case and Gulicki several, but I have not been able to obtain the reports of these.

In all these cases the condition has been allowed to go on for several years (from two to eight) and the patients have been extremely ill from the combined effects of pain, emaciation, and morphia. Such patients are in the worst possible condition to recover from a severe operation, and the actual results obtained as to mortality are better than might have been expected. It is quite clear, however, that if the value of the operation is recognised cases will be sent to the surgeon much earlier, and in this event there is no reason for regarding the operation as a particularly dangerous one.

Before leaving this part of the subject it is of interest to refer to two operative procedures of a nature closely allied to that of Förster. The one is described by Cotte.[9] He had a patient who for from five to six years had had very severe gastric crises with other signs of tabes. On Jan. 28th, 1906, the abdomen was opened and the stomach was found to be normal. The solar plexus was freed from the cœliac axis and stretched. All pain and vomiting were completely relieved by this operation, and this relief was maintained at the time of the report five months later. It is difficult to believe, however, that a procedure of this kind can possibly be more than of temporary alleviation, but it is worth bearing in mind for those cases where the abdomen has been opened on account of intractable vomiting and where no gross disease of the stomach is found.

The other suggestion is contained in some remarks by Frank[7] during the German Surgical Congress when Förster's operation was under discussion. He states that it is possible to sever the posterior roots by avulsion of the intercostal nerves without opening the vertebral canal.

SECTION III.—*For Spasm.*

CASE 4.—The patient was a girl, aged 16 years, under the care of Dr. E. J. Toye, of Bideford. She had had spastic hemiplegia since infancy.

Condition.—May, 1910. A well-nourished and very intelligent girl, perfectly healthy except for the paretic condition. The right arm is never used, but held at the side with the forearm strongly pronated and the hand flexed. There is no muscular wasting. All active movements are clumsy and uncertain, whilst passive movements provoke a strong and painful spasm. This is particularly the case with the muscles of the hand, and any attempt to straighten the fingers or wrist causes them to be strongly flexed so that the tips of the fingers touch the front of the forearm. The movements of the right leg are much less abnormal, but there is a spastic contraction of the calf muscles which makes her walk on the toe.

First operation.— May, 1910. The median nerve was stretched above the elbow. The tendo Achillis was cut. The relief of the arm spasm was of very short duration, but the leg condition has been permanently improved.

FIG. 4.

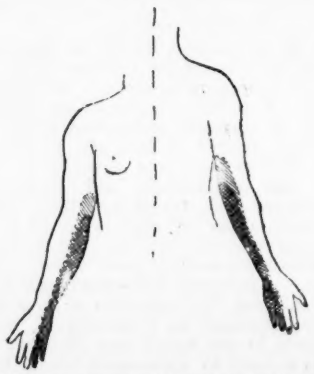


Diagram of the area of anæsthesia in Case 4 after the operation. The larger area shows the loss of pain sense.

Second operation.—Dec. 20th. Posterior root resection. The right halves of the fifth, sixth, and seventh cervical vertebræ were removed and the dura was opened. The right posterior roots of the sixth, seventh, and eighth cervical and first dorsal nerves were resected. On the following day the hand was absolutely flaccid and afforded the most convincing demonstration of the influence of posterior root resection in abolishing spasm. About a week later, although there was no return of spasm, the muscles had regained their tone, and it was evident that the long-continued contraction of the forearm muscles had caused a shortening of these relative to the length of the bones. Either the wrist or fingers could be extended separately, but not at the same time.

FIG. 5.

Reproduction of a photograph of Case 4 before operation.

Third operation.—Jan. 3rd, 1911. A portion of both radius and ulna measuring three-quarters of an inch was removed. The bones were brought together over medullary pegs without any other sutures.

Present condition (April, 1911).—The forearm is kept on a splint with the hand in a position of hyperextension and abduction. The patient has already acquired some use in the fingers, being able feebly to grasp a pen. The whole hand and fingers can be fully extended, but the thumb is still strongly adducted, owing to the shortening of its intrinsic muscles. Movements at the elbow and shoulder can be executed within a small range which is slowly increasing. Sensation is unimpaired except over an area extending along the ulnar side of the forearm, including the little and ring fingers, and reaching above the elbow for two inches. (Fig. 4.) The protopathic loss is slightly greater than the epicritic, the margin of the areas of the two forms of sensation being about one inch apart above the elbow and half an inch in the forearm.

[6] Bruns and Sauerbruch: Mittheilungen aus den Grenzgebieten der Medicin und Chirurgie, 21, i., p. 173.

[7] Centralblatt für Chirurgie, 1910, app.

[8] Thomas and Hall: Boston Medical and Surgical Journal, July 7th, 1910.

[9] Cotte: Lyon Medicale, 106, p. 777.

CASE 5.—The patient was a single woman aged 33 years. She is said to have had "a stroke" when 15 months old, ever since which she has been weak in the left arm and leg. For some years past she has been an inmate of the workhouse and she was admitted to the Cossham Hospital in March, 1911.

Condition on admission.—Well nourished and intelligent, with no disease except spastic paresis of the left arm and leg. Slight wasting and loss of mobility on the left side of the face. Left arm: There is some general paresis affecting chiefly the muscles below the elbow. This is accompanied by spasm and coarse athetoid movements of the hand and fingers. Left leg: Slight muscular wasting below the knee; the foot is held in a position of extreme equinus, and on attempting to correct this very marked clonic contractions are set up which are very painful and make her cry. On attempting to walk the patient holds the foot in extreme plantar flexion and is often thrown to the ground by the onset of clonus. It is this liability to be thrown down that makes her unable to earn her living as a domestic servant. The left knee-jerk is much increased. Babinski's sign is absent. The whole of the left side of the trunk and limbs present a marked anæsthesia and analgesia.

Operation.—March 13th, 1911. Laminectomy of the eleventh and twelfth dorsal and first and second lumbar vertebræ; resection of the second and fourth lumbar and first and third sacral left posterior nerve roots. The blood pressure only fell from 140 to 128 mm. during the operation and there was no immediate drop after the actual division of the nerves.

FIG. 6.

Reproduction of a photograph of hand of Case 4 after operation.

After-history.—The patient made a good recovery, except for some pain in the wound and a slight attack of cystitis which followed temporary retention of urine. On March 16th the note is: "The muscular rigidity of the left leg is greatly improved, the foot can be dorsi-flexed without causing any clonus, the knee-jerk is absent." But unfortunately this improvement was only of temporary duration, and on April 25th the liability to ankle-clonus had returned. She had at that time a good deal of ataxia in the movements of the legs, which made her feel that the operation had left her worse than before. This case, though a failure from the patient's point of view, is very interesting and instructive from that of physiology. Professor Förster gives the fifth lumbar and first and second sacral nerve roots as being the segments of the cord concerned in the control of the plantar-flexors of the foot, and of these three I only divided the middle one—viz., the first sacral. This accounts, I think, for the very short duration of the relief of the spasm. The patient refused to have anything further done.

CASE 6.—A labourer, aged 48 years.

History.—The patient had been in the army and had served in Egypt. He had had a sore on the penis, but does not know whether it was followed by any other signs of syphilis. He was quite well until three years ago when he began to feel weakness in the legs and pain. Both these symptoms became steadily worse and for the last year he had been an inmate of the workhouse.

Condition.—The patient was admitted to the Cossham Hospital on March 9th, 1911. His condition was as follows. He is thin and weak, but there is no organic visceral disease. The right eye has a cataract of three years' formation, the left eye has good vision, but the pupil is small, reacting to light, but not to accommodation. All the muscles of the trunk and limbs are flabby and wasted. The left arm is very rigid, being held with the elbow flexed at a right angle. The legs are kept flexed at the hips and knee-joints and strongly adducted, so that he has to wear pads between the knees and ankles to prevent these parts becoming rubbed into sores. Any attempt at extension or abduction of the legs causes him the most intense pain. He finds that sitting in a chair is the most endurable attitude, but during the past year the pain has been so intense as to allow him but little sleep.

Operation.—March 11th, 1911. Laminectomy of the eleventh and twelfth dorsal and first and second lumbar vertebræ; resection of the first, third and fifth lumbar and first and second sacral left, and the first and fourth lumbar and first and second sacral right posterior spinal roots. The blood pressure only fell from 108 to 102 mm. during the operation and there was no noticeable drop after the actual section of the nerve roots.

After-history.—The pain and spasm have completely disappeared from both legs, from immediately after the operation until the date of the report (June, 1911). The patient has been able to sleep quietly and comfortably, and he expresses himself as greatly pleased with the relief he has been afforded. On April 23rd a tenotomy was done of both the adductors and the hamstrings on each leg, after which the limbs could be placed in a position of full extension and abduction. He can stand with crutches, but we have not yet been able to get him to walk. The wasting and paresis do not give much grounds for hope in this respect.

FIG. 7.

Reproduction of a photograph of Case 6 before operation.

I do not propose to summarise the cases published of this operation for the relief of spasm, because Professor Förster is dealing fully with this and with the other general aspects of the question. There are, however, several points of interest about the subject, suggested by the cases related that I will briefly touch upon.

FIG. 8.

Reproduction of a photograph of Case 6 after operation.

The theory upon which the operation is based.—Hitherto, as far as I am aware, there has been no definite proof as to the manner in which the division of the posterior roots diminishes the spasm emitted from the motor nerves of the same segment. Warrington's[10] experimental work, however, supplies this, and Dr. Short has demonstrated in my third case that

[10] Warrington: Journal of Physiology, xxiii., p. 112, and xxiv., p. 464.

there does occur in the anterior horn cells and in those of Clarke's column a definite chromatolysis. This change only affects a certain number of cells, and according to Warrington some of them recover their normal structure in time. We have here, therefore, a definite anatomical proof of the lessening of the motor activity in those segments where the posterior roots have been resected. In the light of this fact it may be urged that some atrophy and loss of muscular power must result from the operation. But this is shown not to be the case by such examples of the operation afforded by my first two cases, in whom all the posterior roots connected with the leg had been divided, and in whom at intervals of more than one year there is neither loss of power or bulk in the muscles.

The best method of laminectomy.—In my first case I adopted the method of an osteoplastic flap, but I think that it has no advantages which compensate for the great risk of the ill-nourished flap sloughing, and I should never attempt it again. Taylor's suggestion

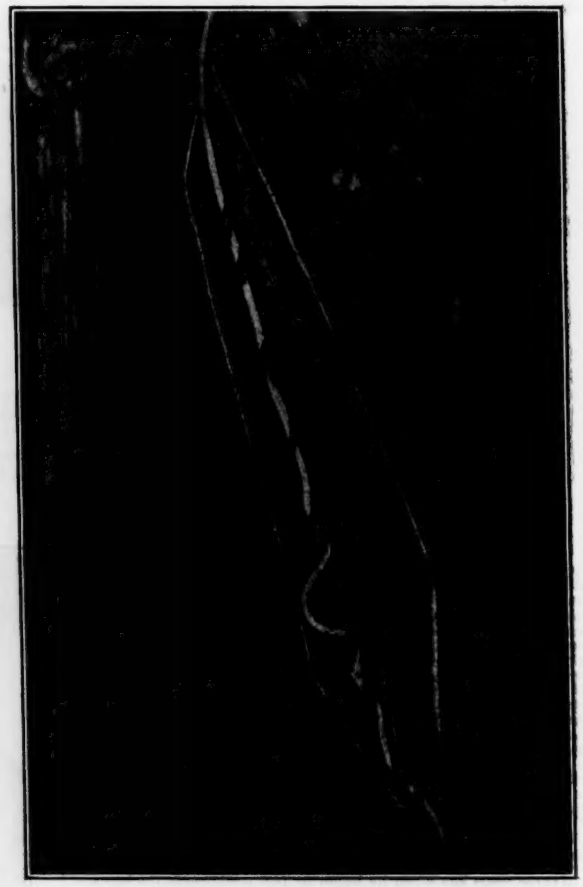
FIG. 9.

Exposure of the brachial roots by hemi-laminectomy of the fifth, sixth, and seventh cervical and first dorsal vertebræ. A white string lies behind the roots. The highest root shown is the fifth cervical, the lowest is the second dorsal.

of a hemi-laminectomy is an excellent one when applied to the cervical region. The bifid cervical spines make it quite easy of performance, the oozing surface is half that of the usual laminectomy, and the important neck muscles are only interfered with on one side. This method gives ample room for dealing with the posterior roots of both sides. In the lumbar region most of these arguments do not apply. The parts are so deeply placed that one wants all the possible lateral space, and the medianly placed muscle tendons are of not much importance.

The question of the two-stage operation.—On the continent the operation has usually been performed in two stages—the removal of the laminæ first and the opening the dura, with resection of the nerve-roots, second. I think that this is not necessary, and that its drawbacks greatly outweigh its advantages. It is designed to minimise the shock, which is supposed to be especially great in this operation. This idea arises largely from a theoretical conception that division of a number of sensory roots must cause a grave degree of shock. But when tested by observations on the blood pressure taken at frequent intervals during the operation it is found that no more effect is caused by the division of the nerve roots than by any other stage in the proceeding. In the last two cases recorded above there was no difference between the blood pressure taken just before and just after the division of the nerves. And at the end of the operation it was only a few millimetres less than at the beginning. In those cases where much shock occurs during the course of a laminectomy it is probably due to the free bleeding and to the long time taken in arresting it. If, however, a large quantity (2–3 ounces) of a 1 in 50,000 solution of adrenalin be freely injected into all the subcutaneous and muscular tissues, as suggested by Braun,[11] the operation becomes an almost bloodless one, and

FIG. 10.



Exposure of the lumbo-sacral roots by removal of the laminæ of the eleventh and twelfth dorsal, and the first and second lumbar vertebræ. A white string lies behind the roots. The highest root shown is the first lumbar, the lowest the fourth sacral. The filum terminale is held up by thread.

since I have adopted this plan (in the last three cases) I have not had to apply a single pair of pressure forceps or ligature a bleeding point. If, then, the operation can be made quick and bloodless, and if the division of the nerve roots is not productive of shock, there is left no reason for adopting the two-stage method of attack. The disadvantages of the double operation are, moreover, very great. There is much increased danger of sepsis, to which a considerable proportion of the recorded deaths have been due. After the first stage there is all the pain of an ordinary laminectomy, whilst the painful spasms or crises are much exacerbated. The risks of the

[11] Braun: Deutsche Zeitschrift für Chirurgie, 1910 . 561.

anæsthetic are doubled, and the chances of healing by first intention are diminished.

The approach to the lumbo-sacral roots.—It has usually been advised in dealing with the lumbar and sacral roots to approach them at their point of exit from the dura. But this necessitates the removal of all the lumbar vertebral laminæ. These, on account of their size, their depth, and the thickness of the muscles covering them, are the most difficult to remove. It seems to me that it is much simpler and easier to attack the lower roots at the point where they all lie close together at their origin from the spinal cord. This necessitates a smaller removal of laminæ, because the roots lie crowded close together instead of far apart. It is quite sufficient to take away the laminæ of the eleventh and twelfth dorsal and the first and second lumbar vertebræ to fully expose and resect all the lumbar and sacral roots. The incision is placed higher up in the back in a situation where it is in less danger of being fouled by urine or infected from a bed-sore. The differentiation between the anterior and the posterior roots is much easier at the level of the cord than at the exit from the dura. The only disadvantage of the high attack of the roots is the increased difficulty of identifying the various nerves. This may be overcome by observing that the third sacral root is the last root of any size to be given off from the conus medullaris. This never need be cut for the relief of spasm of the leg muscles because it is associated with the buttocks and perineum only. The root above it—viz., the second sacral—is the first to be divided, and then each alternate root is removed. So long as a good half of the afferent roots in the lumbar and sacral regions are divided the object of the operation is fulfilled, irrespectively of the exact nerves cut. In certain cases—e.g., my fifth case—where the main complaint is due to spasm of a single group of muscles, it would be better, I think, to divide all the posterior roots concerned with that group rather than to take alternate nerves. It was because I failed to do this that the result in the case I refer to was so poor.

The relation of orthopædic operations to nerve-root division.—Professor Förster has so clearly indicated the general rules for the selection of cases of spasm suitable for the operation that I will only refer to one point. It has been suggested by some, especially by Biesalski,[12] that the nerve operation should not be done until every possible attempt has been made by tenotomies and other orthopædic operations to correct the deformities. There are, of course, some slight cases where a simple tenotomy will give great relief, but when there is that excessive spasm which ties up a whole limb in a complicated deformity it seems to me to be useless to expect any good at all from orthopædic operations whilst the spasm remains unabated. Both weight extension and splint treatment are very badly tolerated by patients in whom there is active or painful spasm, whereas if this spasm be first abolished by the nerve operation the ideal conditions of muscular flaccidity and freedom from pain are provided which are so necessary for the correction of deformities.

I would briefly summarise my conclusions as follows:—

1. For the relief of pain the operation of posterior nerve-root resection is a somewhat uncertain proceeding. Cases which present very great pain without any organic disease are often of a highly neurotic temperament, and their pain seems to have an important psychical element which is not relieved by the operation.

2. For the relief of visceral crises the operation holds out the only prospect of radical cure which we know of at present. Only those cases of this kind are suitable in which all other means of relief have failed, but on the other hand it is important not to wait until the patient has become debilitated by emaciation and morphia.

3. In cases of spasm associated with lesions of the pyramidal tract the operation has its largest field of usefulness. Spasm is in all these cases definitely relieved, and if the pyramidal tract is not wholly severed a great improvement of motility results.

4. The operation causes definite chromatolysis of some of the motor cells in the anterior horn of the segments involved, and this is probably associated with the lessening of motor spasm.

5. By the use of adrenalin injections as a preliminary to the operation the procedure becomes an almost bloodless and speedy one.

6. There is no special shock associated with the division of the posterior nerve roots.

7. It is better to perform the whole operation in one stage.

8. In dealing with the brachial roots it is best to do a hemi-laminectomy.

9. The lumbo-sacral roots are best approached at their junction with the cord rather than at their point of exit from the dura.

In conclusion, I would express my most sincere thanks to Professor Förster for the inspiration of his work and writings, and especially for his kindness in coming over to London to explain his views and to demonstrate the brilliant results which have been achieved by his initiative. I have also to thank most cordially Dr. A. R. Short for his elucidation of the pathological part of my paper, and Mr. Jackson Taylor for the photographs and slides of the cases which were under his care as my house surgeon.

(*Note.*—A full list of references may be found at the end of the articles by Professor Förster and Mr. Hey Groves in the Proceedings of the Royal Society of Medicine.)

Bristol.

[12] Biesalski: Münchener Medicinische Wochenschrift, August, 1910, p. 1634.

NOTE ON THREE CASES OF FIBROID TUMOUR OF THE UTERUS SPONTANEOUSLY FATAL.

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IN considering the line of treatment to be adopted in cases of uterine fibroids, it should be borne in mind that although, as a rule, these tumours for the most part grow slowly, there may, nevertheless, even after many years of quiescence, come an acute or subacute stage which may have a fatal termination, as in the cases here recorded. The life-history of these growths may extend over many years; therefore, if left to run their natural course, it rarely happens that one observer can see the whole progress of a case of fibroids from the time when the tumours are first recognised, or first produce symptoms, to the end of the case, apart from operation.

While, as has been said, fibroids, on the whole, are characterised by slow growth, often with intervals during which they appear to be stationary, they may at times take on changes, whether of degeneration and infection, or of growth, which rapidly cause acute symptoms, and may put the patient's life in jeopardy. Such an acute crisis may easily happen in a patient known to have had fibroids for many years, but it is quite likely that when the acute crisis does occur she may not come under the observation of the practitioner, or practitioners, who have seen her during the earlier period of the case. Those who have happened to have seen the case only during its quiescent and apparently harmless phases may never know what the termination has been, and if they happen to bear the case in remembrance at all may think of it as an example of the satisfactory results of expectant treatment.

Reflections of this kind are suggested by such cases as the three about to be recorded. In each of them the tumours must have been present for many years, and during the greater part of the time presumably symptoms were either absent or slight. Similarly, during the greater part of the time the general health was not seriously affected, and the tumours might no doubt have been removed at a very slight risk. While I do not advocate removing fibroids of the uterus when they are really small, and causing no symptoms, I do think that once they have reached a size equal to that of the pregnant uterus at the end of the third month, for instance, even apart from any marked symptoms, it is safer for the patient to have the growths removed. The popular impression that these tumours may be expected to give no trouble after the menopause is certainly often wrong. Quite recently, for instance, a patient, 65 years of age, was admitted under my care into the London Hospital suffering from metrorrhagia and other symptoms. On dilating the cervix a submucous fibroid of the size of an orange was found in the uterine cavity. It was removed by cutting it away piecemeal,

and the patient did well. I have seen many other cases where serious symptoms have been caused by fibroids long after the menopause.

CASE 1. *Case of fibroid spontaneously fatal from hæmorrhage.*—The patient was a married woman, aged 47, who had had three children, the last in 1895, and who was admitted under my care into the London Hospital on April 4th, 1908. Up to two years previously the catamenia had been regular and normal; since that time the periods had been more frequent and profuse. The patient was admitted from the out-patient department, where she had come complaining of flooding and fainting attacks for the previous three days. During vaginal examination in the out-patient department a severe hæmorrhage occurred, necessitating immediate plugging of the vagina with gauze before the patient could be removed into the wards, where she was admitted at 4 P.M. At 8 P.M. on the same night the gauze plugging was gently removed. A fresh alarming hæmorrhage started. The vagina was again plugged, but the patient never recovered from the effects of this hæmorrhage; she shortly became delirious and died from gradual heart failure secondary to the hæmorrhage on April 8th. As regards the treatment adopted after her admission, saline injections per rectum were given freely, but they proved useless.

FIG. 1.

Fibroid polyp springing from anterior lip of cervix. Fatal hæmorrhage. Vagina opened posteriorly. Case 1.

FIG. 2.

Fibroid of anterior wall of uterus and cervix. Ureters dilated by pressure. Severe hæmorrhage; sudden death, probably partly due to uræmia. Case 3.

Post-mortem examination. — The pelvic cavity is occupied by a smooth rounded mass 4 inches in diameter lying below and in front of the uterus, and springing by a pedicle from the anterior lip of the cervix (Fig. 1). The bladder is pushed upwards and forwards; it is flattened from side to side and the posterior wall is bulged forward; the rectum is similarly compressed, and its anterior wall is pushed back. Vagina: On opening the vagina a large mass is seen distending it, having a diameter of 4 inches. High up posteriorly is seen the external os, the posterior lip of the cervix being thin and crescentic. On section, the tumour shows well-defined white fibrous strands and reddish-brown areas enclosed between them. A capsule is distinctly seen loosely attached to the surface of the tumour. At its lower vaginal pole the capsule shows several small ulcerated areas, which have encroached on the venous sinuses of the capsule. Numerous thrombi occupy those ulcerated patches, which have evidently been the source of the hæmorrhage. There is no marked myocardial degeneration, in spite of the grave general anæmia. With the exception of œdema of the lower lobes of the lungs and some muco-purulent secretion in the bronchioles, there are no other outstanding pathological lesions of importance.

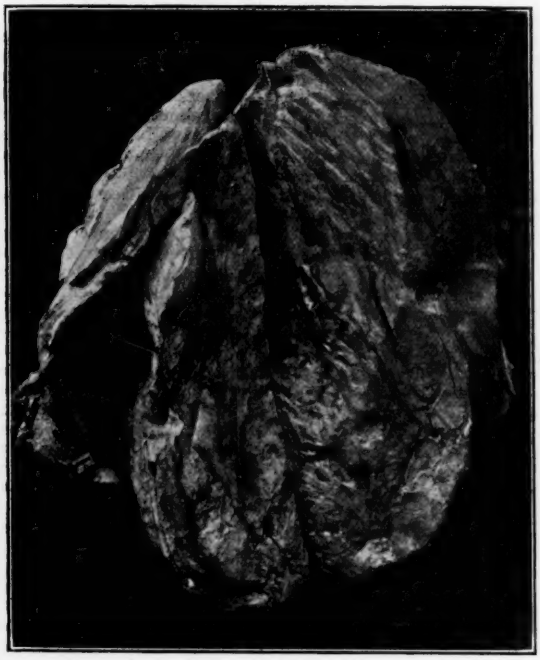
CASE 2. *Case of fibroid spontaneously fatal from pulmonary embolism.* — The patient, a single woman, aged 42, was admitted into the London Hospital under my care on June 25th, 1909. She complained of a lump in the abdomen which she had noticed for 18 months, and which had been slowly growing; also of micturition being frequent, and on two occasions there had been actual retention. There was said to have been no menorrhagia. The patient was somewhat anæmic. On examination there was a firm median swelling in the hypogastric region, which could not be separated from the uterus on bimanual examination, and was taken to be the uterus enlarged by fibroids. The patient seemed to be in fair general health on admission, except for the slight anæmia and the presence of the tumour. On the day following admission she was said to have had a kind of "fit." She became suddenly rigid and cyanosed, and fell back dead. She was quietly reading in bed at the time when the seizure occurred.

Post-mortem examination. — This showed the uterus to be considerably enlarged by an interstitial fibroid in the anterior wall forming the hypogastric "tumour" found on examination. It measured 7 inches in diameter and had a circumference of 20 inches. The fibroid was soft and of a beefy-red colour, an example of "red" degeneration. The cause of death was found to have been pulmonary embolism, A lam nated friable clot, 2 inches in length, was found blocking the pulmonary artery at its bifurcation and extending a short way along the left pulmonary artery. The clot was found to have originated on a valve at the end of the left iliac vein, where an adherent grey clot was found filling the lumen of the vessel and extending a quarter of an

inch in the direction of the blood stream. Both ureters were dilated so as to be half an inch in diameter. The pelvis of each kidney was also largely dilated.

CASE 3. *Case of large interstitial fibroid of the uterus; sudden collapse, heart failure, and death.*—The patient, a widow, aged 41, was admitted under my colleague, Dr. F. J. Smith, on the morning of Jan. 28th, 1910. She had had one child eight years ago. History: She had had a severe flooding in June, 1909, and bleeding had continued on and off, clots occasionally being passed, till Jan. 24th, 1910. On this day, while at the sewing-machine, a severe flooding came on. The medical man who was sent for to see her advised her immediate removal to the London Hospital. On admission she was very much collapsed, but was temporarily revived by saline injections and strychnine hypodermically. A catheter specimen of the urine was examined, and contained no albumen. On the afternoon of the 28th I was asked to see her. She was so much collapsed that anything like a complete examination of the case was impossible, but a large tumour was noticed in the abdomen reaching considerably above the umbilicus. She was transferred to the gynæcological ward at 7.45 P.M. on the same evening. The pulse then was very weak and running. She was profoundly anæmic, and respiration was sighing. At 8.30 her condition became very much worse, and her pulse was then uncountable. She was treated with saline injections per rectum, also with coffee and brandy per rectum, but she died on the same evening. No hæmorrhage had occurred since her admission into the hospital.

FIG. 3.



Uterus opened, showing fibroid (in section) springing from anterior wall of uterus and cervix. Uterine cavity seen to the left was seven inches long. Case 3.

Post-mortem examination.—A large fibroid tumour lies in the anterior wall of the uterus and cervix; its lower pole is impacted in the pelvis, its upper pole rises several inches above the umbilicus; the terminal two inches of each ureter are seen firmly compressed between the fibroid behind and the bony wall of pelvis in front. (Figs. 2 and 3.) Above this point the ureters are tortuous, and dilated to the calibre of the forefinger. The pelves of both kidneys are thin and dilated, and both kidneys are hydronephrotic. There are extreme anæmia and œdema of both kidneys. The bladder is very slightly dilated; its base is thin. The majority of the muscle is drawn up and retracted to the fundus of the bladder. The ureters are easily canalised at their terminal portions by a fairly large probe. On the left side there is a small hæmatosalpinx. The right and left ovaries are atrophied, with a small hæmorrhagic cyst in the left ovary. There are some chronic fibrotic tubercles in both apices with caseous nodules; fibrous adhesions are present over the whole of the left lung and at the right apex. There are anæmia and œdema of all the organs.

Upper Brook-street, W.

THE THERAPEUTIC EFFECTS OF CARBON DIOXIDE SNOW. METHODS OF COLLECTING AND APPLYING IT.

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FOR some years liquid air has been used as a local destructive agent by dermatologists, especially in America. The possibility of using it with good effect in surgery early presented itself to the minds of many surgeons who were aware of its properties, but until within the last few years the difficulty of obtaining and transporting it has stood in the way of its general use. It has been successfully used in the treatment of warts, nævi, and angiomata, also in cases of lupus vulgaris, chronic eczema, and lichen planus. Owing to the great rapidity with which liquid air evaporates when exposed to the atmosphere it can be carried about only in especially constructed vessels which cannot be corked or stoppered or they would burst from the internal pressure set up in them. These vessels, the walls of which are composed of two thicknesses of glass with a space between them from which the air has been exhausted, are known as Dewar's or, more popularly, Thermos flasks. The liquid is difficult to apply to small areas, and considerable skill and practice are necessary to limit its effects to the area required. It produces an intense cold, reaching as low as 120° C. below zero. It was first used in this country by the late Dr. Radcliffe Crocker, who published details of a large number of cases which he had treated with excellent results.

In 1908 Dr. Allen Pusey, of Chicago, suggested the use of carbon dioxide snow in its place, as being far more easily manipulated and applied. The fact that the temperature of the snow is nothing like so low as that of liquid air, coupled with the fact that it can be collected with ease and carried about with little trouble, should commend it to those who require such an agent. With the snow properly prepared a temperature of 79° C. below zero can be obtained. This temperature is sufficiently low for the majority of cases. It has been found a very valuable local destructive agent, and has been applied in a large number of dermatological conditions with good effect. The chief merit of carbon dioxide snow lies in the fact that the materials and apparatus for preparing, collecting, and applying it can be always kept ready at hand, whilst its preparation occupies but a few minutes and its cost is small. The principle involved in its use is that of destroying the tissue cells by freezing, the effects being attributed to the exceedingly low temperature obtained. It is said that carbon dioxide has no local action of its own. The freezing of the skin gives very little pain, certainly not more than can be borne by the average individual, and frequently children bear it without complaint. The immediate effect of the application of the snow is the formation of a hard, white area, corresponding in size to the piece of compressed snow applied. This area is, as

a rule, depressed below that of the surrounding skin, the amount of depression corresponding with the amount of pressure used in its application and the elasticity of the tissues to which it is applied. The time usually occupied in the application of the snow depends upon the nature and position of the lesion attacked, and may vary from five seconds to a minute, or even more. In very superficial nævi from five to 20 seconds is usually sufficient, the time depending on the age of the patient and on the sensitiveness of the skin. Great care must be taken not to administer an overdose, and special care must be exercised when dealing with lesions upon the skins of babies and young children. In very superficial nævi the exposure must be short and the pressure slight. It is far better to administer a too short application than an overdose, as the applications can always be repeated if the desired effect is not attained on the first occasion. In deeper forms of lesions the applications may last as long as 40 seconds, and in treating corns and large warts, even after the greater portion of the hardened skin has been cut away, the applications may extend to over a minute. Great care must be exercised in deciding not only the length of the application but the amount of pressure necessary to bring about the desired result. Over-exposure may result in the formation of an ulcer which may leave a permanent and ugly scar, and great damage may be done by overstepping the bounds in either the length of the application or the amount of pressure used. The scar, after a successful treatment, is, as a rule, fine, colourless, and soft. In superficial lesions the scar becomes almost invisible after a few months, but in deep ones it can be slightly seen throughout life, but even under the most adverse conditions the scar is a better one than is formed by any other method with, perhaps, the exception of radium. Excellent results are obtained by this method of treatment in pigmented stellate and capillary nævi. In pigmented nævi a well-nigh perfect result can be obtained. In such cases it is far superior to radium, which appears to have no effect upon the pigment itself. This, however, totally disappears under the influence of the snow. In pigmented hairy nævi and raised angiomata several applications are usually necessary, and although the results are no better than those obtained with radium, the time occupied in obtaining them is shorter and the cost infinitely less. Carbon dioxide snow has been used with marked success in old-standing cases of lupus vulgaris which have ceased to respond to the action of the Roentgen rays, and in some cases of lupus erythematosus excellent results are obtained. In cases of large port-wine stains and moles, where many applications would have to be made, Dr. J. L. Bunch states that liquid air is far more satisfactory than snow.

It is exceedingly difficult to formulate rules as a guide to the length of exposure which should be given and the amount of pressure which should be used in any given case. Dr. Reginald Morton advises that in the treatment of a vascular growth the pressure should be sufficient to arrest the circulation.[1] "The depth to which the freezing action extends is a question of pressure and of the time it is kept up. Where the bone is near the surface it is quite easy to freeze the soft tissues to it. This often happens when treating nævi of the scalp, and such cases do very well on account of its being quite easy to carry out the freezing process quite completely." Immediately after thawing, which process takes far longer than the freezing, there is little difference to be noticed with the exception of a slight reddening, but reaction soon makes itself manifest. Within a few minutes the tissues become firm to the touch and begin to swell and a wheal forms. A vesicle nearly always follows an application of more than 15 seconds, and generally makes its appearance in from one to three hours' time. It is well in most cases to puncture this with a sterile needle, after which it should be dressed with some antiseptic ointment. In from four to five days after a successful application a scab should form, which, unless there be pus underneath, should be allowed to come off of its own accord. No necrosis or sloughing should follow an application properly administered. Necrosis, however, can be brought about by repeated applications given at short intervals.

One of the chief advantages of treatment by means of carbon dioxide snow is the painlessness of the process; it is unnecessary in by far the larger majority of cases to administer an anæsthetic. Carbon dioxide snow can be used with good effect in most of the superficial lesions in which radium is used, and it has the advantage of being far less costly and of occupying far less time in producing its results. It is much more easy to apply to young children, with whom there is always a difficulty in keeping the radium applicator in position.

The field of usefulness of this new agent is as yet not completely explored. Some cases of small rodent ulcer have been treated, but some time must elapse before we shall be in a position to say whether in such cases it is as good as, or superior to, the older methods. That its field of usefulness is limited is certain, but inasmuch as it places in our hands a well-nigh painless method of dealing with some of the pre-cancerous conditions which exist in parts of the body inaccessible to the surgeon, it bids fair to take its place as an exceedingly useful agent in the relief of suffering.

On the occasion of my first introduction to carbon dioxide snow I was struck by the crudity and wasteful method of collecting it, and with the object of overcoming these difficulties I designed a collector and applicators, which I think have distinct advantages over the usual methods employed. My collector not only admits of the obtaining of the small and necessary amount of snow for one treatment without waste, but it renders it unnecessary to transfer the snow from one piece of apparatus to another, a compressed tablet being produced with the greatest ease in two or three minutes. My collector consists of a tube formed from a sheet of perforated zinc or tin, inside which is a tube of copperwire gauze, whilst between the two is a layer of soft material composed of felt, &c. The complete tube, about 8 inches in length and 2 inches in diameter, is furnished at its upper end with a brass mount or ring, which is slightly tapered internally. At its lower end is attached a vulcanite tube which constitutes a mould for compressing the snow into tablets. The open lower end of this mould is stopped during the collection of the snow by means of a vulcanite plug. To the nozzle of the gas bottle is attached a tube provided with a tapered brass plug which fits accurately the brass ring at the upper end of the collector. To obtain the snow the collector is held firmly in contact with the tapered brass plug, whilst with the other hand the bottle valve is gently opened by means of a key.

During the collection of the snow the gas bottle should be held upside down, or, if this is impracticable, it should be tipped to an angle of 45°. (Fig. 1.) The attempt to collect with the bottle in the upright position ends in disappointment and in enormous waste of gas. I have recently improved the collector by covering the perforated zinc with a sleeve or tube of thick leather in which a small hole, an eighth of an inch in diameter, is punched through at its lower end. This

FIG. 1.

Method of collecting CO_2 snow.

[1] The Use of Carbon Dioxide in Dermatology, by Edward Reginald Morton, M.D., F.R.C.S., Brit. Med. Jour., Sept. 24th, 1910. THE LANCET, August 20th, 1910, p. 559.

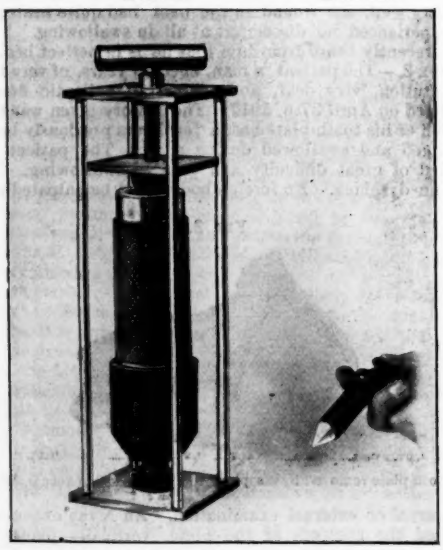
improvement allows of very little waste of gas, and in addition it enables the collector to be handled freely without freezing the fingers. When a sufficient quantity of snow is gathered in the collector a long wooden or vulcanite rod which accurately fits the lower end of the apparatus is passed down its centre. The snow is detached from the sides of the collector and falls into the vulcanite mould, where it is compressed between the end of the rod and the plug, with which, as I have previously mentioned, the lower end of the apparatus is closed. The plug is now removed, and by means of the rod the compressed tablet is pushed through the lower orifice. (Fig. 2.)

FIG. 2.

Compressed tablet of snow being pushed through lower orifice.

If a second tablet is required the plug is again placed into position, more snow is detached from the sides of the collector, and the operation of compression is repeated. It is best to make the tablets from a quarter to half an inch in thickness;

FIG. 3. FIG. 3A.



Screw clamp containing collector and plunger.

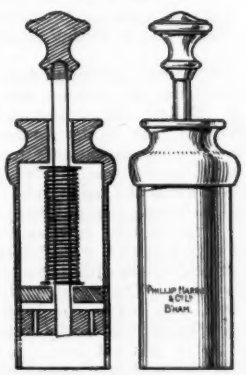
Cone-shaped tablet held in applicator.

their degree of hardness can be regulated by the amount of compression used in their manufacture. When the collector is well filled from four to six such tablets can be made in rapid succession.

Many surgeons prefer to use the snow much more firmly compressed than it is possible to make it by hand pressure alone. To facilitate the obtaining of this I have devised a special screw-clamp (Fig. 3), into which the collector and plunger can be placed, and pressure can be brought upon the tablet by means of a hand-screw. By this means a tablet can be prepared which is of greater hardness, is nearly transparent, and sinks in water. In preparing such a tablet it is necessary that much more snow be used, and only one such tablet can be prepared at a time. As, owing to their hardness, these compressed tablets can be cut up with difficulty, I have devised a method whereby circular surfaces varying from an eighth of an inch to one inch in diameter can be obtained with ease. For this purpose a second plug is required. This plug is hollowed out into the shape of a cone, so that the tablet when prepared consists of a cylinder of compressed snow of from one-half to an inch in length, with a cone-shaped projection of about the same length. By cutting off with a knife a piece of this cone it will be seen that a surface of any desired diameter can be obtained. Fig. 3A shows the cone-shaped tablet held in the applicator which I will shortly describe.

The chief difficulty which confronts the surgeon in the application of carbon dioxide snow is that of firmly holding the snow and of regulating the pressure necessary to produce the desired result. To overcome this difficulty I have designed an applicator which is easy to handle and effective in use. The instrument is made of vulcanite, with the exception of the piston which carries the plunger, the collar which guides it, and the spring which keeps it in position. It consists of a tube of vulcanite, the lower edge of which is bevelled, so as to form a thin edge, and a plunger which is held up by a spring at a distance of about a quarter of an inch from the end of the tube. The plunger is perforated so as to allow of the escape of gas, and thus prevent the tablet from being forced out. Pressure on the knob of the piston allows of the plunger being pushed down until it is level with the end of the tube. The sectional drawing, Fig. 4, shows

FIG. 4.



Vulcanite applicator.

clearly the arrangement. The applicators are made in three sizes. No. 1 holds the full size tablet, as produced by the collector, and is slightly more than an inch in diameter. This applicator is the only one which will hold the hard compressed cone-shaped tablet before mentioned, and is figured in Fig. 3A. Applicator No. 2 is half an inch in diameter, and No. 3 a quarter of an inch. To load the applicator the open end is pressed upon a tablet on a flat surface, when it either takes up the whole of it, or (in case of the softer ones) cuts out a circle of the desired size. The snow not used is returned to the collector. It will be seen that with this apparatus carbon dioxide snow of various degrees of compression can be prepared at will. Some surgeons prefer the hard tablets, others the softer ones. In applying the snow the applicator is held in the right hand in the same way as a hypodermic syringe is held, the necessary pressure being made with the thumb placed upon the knob of the plunger.

If after preparing a hard compressed tablet the apparatus be left clamped up the snow will keep for a considerable

time, and the whole apparatus can be carried in a handbag for some distance without its being necessary to cart about a cumbersome and heavy gas bottle.

The whole apparatus above described has been made at my suggestion by Messrs. Philip Harris and Co., Limited, of Birmingham, whom I have to thank for the care and trouble exercised in carrying out my ideas.

Birmingham.

THREE CASES OF TOOTH-PLATE IMPACTED IN THE ŒSOPHAGUS AND PHARYNX;

WITH SPECIAL REFERENCE TO THE OPERATION OF ŒSOPHAGOTOMY.

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THE following cases were admitted to St. Thomas's Hospital within a few months of each other, under the care of Mr. C. A. Ballance, to whom I am greatly indebted for his kindness in allowing me to operate upon and otherwise treat the patients, and also for permission to make use of the clinical notes.

CASE 1.—The patient, a man, aged 45 years, was admitted on March 3rd, 1910, with the history of having swallowed his tooth-plate during sleep a short time previously. He complained of great discomfort and irritation in the throat; the act of swallowing was exceedingly painful; coughing was frequent, but there was no dyspnœa. A finger in the mouth could detect nothing abnormal, but on external examination a hard mass could be felt about the level of the isthmus of the thyroid. Under chloroform anæsthesia, some four hours after the accident, a finger in the mouth was unable to reach the foreign body, but it could be grasped by long œsophageal forceps. Gentle traction would not dislodge the plate. As it was known to possess some sharp hooks it was thought that these had probably become engaged in the œsophageal wall, and so further internal manipulation was deemed unsafe.

Accordingly, with the neck extended and the head turned towards the right shoulder, an incision was made along the anterior border of the left sterno-mastoid muscle, starting above at the level of the upper border of the thyroid cartilage, and was continued downwards for some four and a half inches. The platysma was divided and the sterno-mastoid retracted outwards and backwards. The omo-hyoid muscle was divided, as was also the anterior jugular vein. The sterno-hyoid and sterno-thyroid muscles, together with the lateral lobe of the thyroid gland, were displaced towards the mid-line, and the carotid sheath with its contents was displaced outwards and backwards. The plate could be felt through the œsophageal wall just below the level of the cricoid cartilage. The œsophagus was easily defined, but the recurrent laryngeal nerve was not seen. A vertical incision was made towards the posterior aspect of the œsophagus and over the underlying plate. The latter was found to be firmly fixed by its hooks to the œsophageal wall, and great difficulty was experienced in its removal. It was found necessary to enlarge the incision in the œsophagus considerably (some three inches in all) before the plate could be extricated. The plate, as shown in Fig. 1, was a large one, bearing four teeth and possessing two formidable hooks. There was very little hæmorrhage. The incision in the œsophagus was closed by two layers of catgut sutures, the first taking up the mucous membrane and the second the muscular coats. The pretracheal layer of fascia was also sutured, leaving room, however, for a small rubber drainage-tube, which reached as far as the line of incision in the œsophagus at its lowest extremity. The ends of the divided omo-hyoid muscle were united with catgut, and the skin incision was closed with silkworm-gut sutures.

As regards the after-treatment of the case, the patient was propped up in bed, a tent and steam-kettle were employed, and menthol inhalations were frequently administered. For the first six days alternate rectal feeds and saline were given, the patient only being allowed to suck formamint lozenges and acidulated tablets, which had the desired effect of relieving thirst, and which, together with menthol inhalations, kept the mouth clean and moist. Fluids by the mouth were withheld until the seventh day. The wound in the neck was dressed with gauze wrung out in 1 in 60 carbolic lotion. The drainage-tube was removed on the fourth day after operation and the stitches on the ninth day. By this time the wound had almost healed, except in the position previously occupied by the drainage-tube, in which situation there was a certain amount of leakage when fluids were swallowed. At this stage the patient was noticed to be jaundiced, the sclerotics especially being deeply tinged. On the tenth day very smart hæmorrhage occurred

FIG. 1.

Tooth-plate removed by œsophagotomy in Case 1. (Actual size.)

from the wound in the neck on two occasions and again on three occasions the following day. The patient was left very weak as the result. Rectal saline, &c., were again resorted to for 48 hours. There was no further hæmorrhage, and so food was then given by the mouth and gradually increased, soft-boiled eggs being allowed on the fifteenth day and a fish diet on the seventeenth day. Jaundice became less marked after the hæmorrhage, and by the thirteenth day was scarcely perceptible. The patient got up on the seventeenth day and left for a convalescent home on the twenty-second day after operation. On discharge he was able to swallow solid food without any discomfort and the wound had quite healed except for a small amount of discharge from the place where the drainage-tube had been. I saw the patient again some three weeks later. He was looking very well, the wound in the neck had quite healed, and he experienced no discomfort at all in swallowing. I have quite recently heard from him that he is in perfect health.

CASE 2.—The patient, a man, aged 50 years, of very feeble constitution, very deaf, and subject to epileptic fits, was admitted on April 27th, 1910. The history given was that a portion of his tooth-plate had a few hours previously become dislodged and swallowed during a fit. The patient complained of great difficulty and pain in swallowing. There was no dyspnœa. No foreign body could be palpated either

FIG. 2.

Tooth-plate removed by œsophagotomy in Case 2. (Actual size.)

by internal or external examination. An X ray examination revealed the presence of the plate, vertically placed and situated towards the upper end of the œsophagus. Under chloroform anæsthesia attempts to remove the plate through the mouth failed, after 15 minutes' trial. Œsophageal forceps could detect its presence, but it could not be withdrawn. Œsophagotomy was accordingly performed in a similar manner to that adopted in the previous case. In this instance, however, the recurrent laryngeal nerve was seen, and was

gently drawn backwards and protected. The foreign body could be detected through the œsophageal wall, a short distance above the sternum. An incision was made just above this situation, and the plate was removed. In this case also hæmorrhage was very slight. The foreign body was a portion of a broken tooth-plate; it carried four teeth and presented several sharp jagged projections (Fig. 2). The incision in the œsophagus was closed by two layers of continuous catgut sutures, the first for the mucous membrane and the second for the muscular coats. A superimposed layer of interrupted catgut sutures through the muscular coats was also employed for extra protection. The divided pre-tracheal layer of cervical fascia was sutured, leaving room, however, for a drainage-tube down to the line of incision in the œsophagus, as in the preceding case.

On the first day after operation the temperature rose to 101·4° F., and remained high until the fifth day, when it fell to normal; slight rises for a few days followed. The patient was propped up in bed and supplied with a tent and steam-kettle. Menthol inhalations were also frequently administered. Rectal alimentation was employed for the first three days, acidulated tablets only being allowed by the mouth, which was frequently cleansed. On the third day subcutaneous emphysema was noticed on both sides of the neck, extending as low as the second rib on either side. This persisted altogether for about a week, gradually disappearing and causing no trouble to the patient. Fluids by the mouth were given on the fourth day, and slight leakage from the wound occurred. The drainage-tube was discarded. The patient was very anxious to be allowed to get up, and permission was given on the seventh day. The gratification of this wish, together with the gift of an ear-trumpet, went a long way, I feel sure, towards his recovery. The stitches were removed on the ninth day, and the wound had healed except in the position of the drainage-tube. Subsequent recovery was uninterrupted, the patient leaving hospital on the twenty-first day, able to swallow perfectly and only troubled by the presence of a very small amount of discharge from the wound in his neck. Seen some weeks later the patient was looking very well, the wound had quite healed, and he experienced no discomfort at all on deglutition. I have quite recently heard from him, in reply to a letter of mine concerning his present condition. He says that he experiences no difficulty in swallowing, the wound is quite sound, and that he eats well in spite of the fact that he has discarded his tooth-plates.

CASE 3.—The patient, a man, aged 34 years, the subject of epileptic fits, two or three occurring weekly, was admitted on Nov. 13th, 1910, with a history of having swallowed his tooth-plate during sleep five hours previously; as to whether he was suffering from a fit at the time is doubtful. The plate was one from the upper jaw, bearing two teeth on the right side and four teeth on the left side; it also possessed one sharp projection in the mid-line anteriorly. There was no dyspnœa, but the patient had considerable difficulty in swallowing. Examination under chloroform anæsthesia revealed the presence of the plate in the pharynx, its sharp projecting portion having become fixed in the epiglottis. The plate was disimpacted and extricated through the mouth by means of œsophageal forceps. The patient left hospital on the following day.

The operation of cervical œsophagotomy for removal of foreign bodies impacted in the œsophagus is one which, happily, it is not often necessary to perform, for the reason that the greater number of such accidents occur in children, where the foreign body is usually of the nature of a coin or a body with smooth and regular surfaces. Such obstacles, as a rule, can be extricated by means of the coin-catcher, or, preferably, removed by direct œsophagoscopy. There is no doubt that in employing the coin-catcher one is working in the dark, and on several occasions I have found great difficulty in extracting the coin-catcher itself, with or without the coin, the beak of this instrument having a habit of becoming impacted somewhere in the region of the upper extremity of the œsophagus.

I think it will be agreed that the scientific method of dealing with such a foreign body nowadays is by obtaining a view of it by means of the œsophagoscope, and so attempting its removal *in situ*. Removal by œsophagoscopy is, however, contra-indicated when the foreign body, as shown by the X rays or seen by means of an œsophagoscope, is large and irregular, since removal by forceps in such a case may result in laceration of the œsophageal wall, and may lead to cervical or mediastinal cellulitis. Nevertheless, it may be possible and advisable even with certain large foreign bodies, if regular in outline, to effect division *in situ* and then undertake removal of the portions by direct œsophagoscopy. When signs of perforation of the œsophagus are already present, as shown by subcutaneous emphysema, cellulitis of the neck, &c., in such cases attempted removal by œsophageal forceps, with or without œsophagoscopy, is certainly contra-indicated, and œsophagotomy is urgently called for.

In adults the commonest form of foreign body to become impacted in the œsophagus is a tooth-plate, and since such plates are often irregular in outline, possessing sharp hooks in many cases, for successful removal œsophagotomy is usually indicated. These tooth-plates are generally swallowed during sleep or while the patient is having a fit. Before deciding to open the œsophagus in such a case some indication as to the shape and size of the plate may be obtained by interrogating the patient. External palpation may disclose its presence, a view of it may be possible by direct œsophagoscopy, or œsophageal forceps may detect it. Further, the position, size, and shape of the tooth-plate may be ascertained by means of a skiagram. It may be possible to remove small tooth-plates which do not possess sharp hooks through the mouth with the aid of an œsophagoscope, either *in toto* or, if necessary, after division with some suitable instrument. If such attempts fail, however, œsophagotomy should be promptly undertaken.

Killian[1] states that in his experience foreign bodies, if they become impacted, are usually retained close to the upper end of the œsophagus. Should such a body pass the upper orifice of the œsophagus it will usually traverse the mediastinal portion of the tube, but may, however, become fixed within two inches of the cardiac orifice. With regard to the question as to how low down in the œsophagus a foreign body can be extracted by cervical œsophagotomy, Jacobson[2] points out that the most accessible portion of the œsophagus is at its junction with the pharynx, opposite the cricoid cartilage, and for the first two inches below this point. Richardson[3] states that in the cadaver all portions of the œsophagus are accessible to the finger, either by means of cervical œsophagotomy or by gastrotomy. He further maintains that the lower three inches of the œsophagus are just within range of gastrotomy. Fagge's[4] experiments on the cadaver do not, however, coincide with the above. In his experience at least two or three inches of the mid-thoracic portion of the œsophagus are inaccessible to the finger. It seems to me that the danger of removing a foreign body impacted in the mid-thoracic œsophagus by cervical œsophagotomy would be almost as great as removal by means of direct œsophagoscopy, if necessary after division of the obstacle, since the risk of laceration of the œsophageal wall during extraction would be considerable with either method. Transmediastinal œsophagotomy has been employed in such cases, but I have no experience of the operation. Fortunately, however, impaction in the mid-thoracic portion of the œsophagus is extremely uncommon, owing to the dilatability of this portion of the tube.

A few special points might be emphasised in connexion with the operation of cervical œsophagotomy. The skin incision should be a long one, in order to allow of free exposure of the œsophagus without unnecessary traction on the important structures in its immediate vicinity. It should be either oblique, taking the line of the anterior border of the sterno-mastoid muscle, or curved, taking the line of cleavage of the skin, as recommended by Kocher, and similar to that which he employs in his operation of thyroidectomy. If possible, the recurrent laryngeal nerve should be isolated and gently drawn downwards and backwards before the œsophageal wall is incised. If the foreign body can now be felt, it may be removed by a vertical incision either immediately over, or better slightly above, this level. If the foreign body, however, be not palpable, it is perhaps better to distend the œsophagus by means of a bougie passed through the mouth before the incision is made. A free incision in the œsophagus will do less damage than much manipulation through a small incision. In

[1] Zeitschrift für Ohrenheilkunde, 1908, vol. l., p. 120.
[2] Operations of Surgery, vol. i., p. 724.
[3] THE LANCET, 1887, vol. ii., p. 707.
[4] Burghard's System of Operative Surgery.

cases of impaction in the upper thoracic portion of the œsophagus it may be necessary to divide the foreign body with cutting forceps before disimpaction can be accomplished without damage to the coats of this tube. It is stated that hæmorrhage from the muscular wall of the œsophagus is often free, but fortunately it caused no trouble in the cases described above. Severe hæmorrhage may, however, occur from accidental division of the inferior thyroid artery, which accompanies the recurrent laryngeal nerve. Efficient drainage should always be established for several days, the drainage-tube reaching down to the œsophageal wall. Suture of the divided pre-tracheal layer of fascia forms an important protection to the underlying line of sutures; sufficient room should, of course, be left for the passage of the drainage-tube.

With regard to the after-treatment, rectal saline should be employed for the first two or three days. In order to allay thirst I found that acidulated tablets, occasionally given, were very effective; they also served to keep the mouth moist and so diminished the risk of "septic parotitis." Steam inhalations, together with some antiseptic, such as menthol or eucalyptus, are also useful in this respect, besides minimising the liability to pulmonary complications to which these patients are prone, due, no doubt to a large extent, to the element of sepsis which is always present, in a greater or less degree, with a wound in the œsophagus. A sitting posture together with the employment of a steam-kettle and tent are also useful precautionary adjuncts. If progress be favourable fluids may be given by the mouth after from 48 to 72 hours. Should there be any leakage through the cervical wound I think it is better not to give the patient milk to drink, since this is very liable to decompose and hinder repair, but chicken broth or even soft solid food—e.g., Brand's jelly—will be found more suitable. In the above cases, although there was a certain amount of leakage at first, this trouble soon ceased when these simple measures were adopted. If possible, the patient should be allowed to get up after a few days, especially if he is very anxious to do so; the good moral and physical effect produced thereby was well illustrated in Case 2.

The chief post-operative complications of cervical œsophagotomy are, for the most part, septic in origin, and may be roughly classified in the following way: Early complications—(*a*) cellulitis, cervical and mediastinal; (*b*) subcutaneous emphysema. Later complications—(*a*) septic pulmonary conditions; (*b*) secondary hæmorrhage. If cellulitis occur, the wound should be freely opened and drained, and appropriate treatment for combating toxæmia should be vigorously enforced. Subcutaneous emphysema is, as a rule, only transitory and disappears in a few days; it rarely gives rise to any discomfort or cause for anxiety. The occurrence of pulmonary complications is best anticipated, and prophylactic treatment, such as that indicated above, should be employed from the first. Secondary hæmorrhage may be a very serious complication and is invariably septic in origin, as illustrated by Case 1, where it occurred on the tenth day after operation, the blood in all probability coming from some vessel in the œsophageal wall or else from the inferior thyroid artery. Jaundice, which was present in Case 1, was almost certainly toxic in origin in spite of the fact that the local condition was quite satisfactory.

In both cases of œsophagotomy detailed in this paper operation was undertaken early, within four and five hours of the accident respectively. Foreign bodies in the œsophagus should be removed as soon after impaction as possible. If other means of extraction fail, œsophagotomy should be promptly undertaken in order to obtain a successful result. In such circumstances the risk of operation is not great, but the prognosis becomes very grave with the advent of cervical or mediastinal cellulitis.

I am greatly indebted to Mr. F. C. Cowtan for his very able drawings of the tooth-plates reproduced in this paper.

Wimpole-street, W.

SOCIETY FOR THE STUDY OF INEBRIETY.—The next meeting of the society will be held in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., on Tuesday, July 11th, at 4 P.M., when Mrs. W. Bramwell Booth will open a discussion on "The Management of the Inebriate Woman."

MICE IMMUNISED SUBCUTANEOUSLY ARE RESISTANT TO THE IMPLANTATION OF CANCER IN INTERNAL ORGANS.

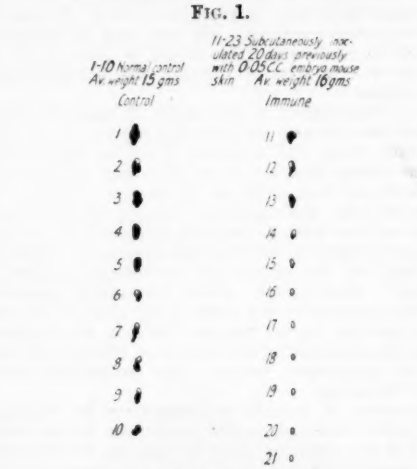
BY W. H. WOGLOM, M.D.,

CROCKER CANCER FUND, COLUMBIA UNIVERSITY, NEW YORK; ASSISTANT TO THE IMPERIAL CANCER RESEARCH FUND, LONDON.

RESISTANCE to the successful inoculation of a tumour has been usually held to be a condition of general and equal distribution throughout the animal's body. A series of experiments carried out last year, however, by Kraus, Ranzi, and Ehrlich [1] led them to doubt the validity of this conception and to conclude that animals rendered resistant by subcutaneous injection of tumour or of normal tissue might not perhaps be so resistant to the inoculation of tumours into their organs as they would be to subcutaneous implantation. The point thus raised by Kraus and his colleagues is of great interest, for should future experiment sustain their suggestion, many of our ideas of immunity would have to undergo revision. In order, therefore, to see whether one had been right in assuming resistance to be a general, rather than a local condition, the following experiment was undertaken.

On March 15th, 1911, a series of mice were inoculated in the left axilla with 0·05 c.c. of an emulsion of embryo skin. Their average weight at that time was 12 grm. On April 4th (20 days later) 13 of them, now of an average weight of 16 grm., and 13 normal controls (of an average weight of 15 grm.) were inoculated in the left kidney with 0·01 c.c. of an emulsion of tumour 63—a mammary adenocarcinoma. Under ether anæsthesia the kidney was approached through an incision in the flank and the inoculation made by means of a syringe fitted with a fine needle. Twenty-five days later the 10 surviving controls and the 13 mice of the experiment were killed and examined and their tumours sketched in outline. In the chart thus made (Fig. 1) the black silhouettes represent tumour, and where

FIG. 1.



Experiment 63/47 J. All mice inoculated in left kidney on April 4th, 1911, with 0·01 c.c.; killed 25 days later, April 29th. The black silhouettes represent the tumours and the kidney-shaped outlines the kidney where this was still recognisable. Note that tumours developed in the kidney of all the normal mice but in only five of the immune mice, and that here they were of much smaller size.

they contain a reniform unshaded area it implies that the kidney itself was still recognisable. In many of the cases however, the kidney had been quite destroyed by the growth of the tumour. Where kidney-shaped outlines alone are shown (Nos. 16 to 23) it means that no growth visible to the naked eye had occurred. It will be seen that while 100 per

[1] Zeitschrift für Immunitätsforschung, &c., 1910, Orig. vi., 665.

cent. of the normal controls developed tumours, only 46 per cent. of the treated animals did so, and, moreover, that in the latter case the tumours were much smaller.

So much having been gained, it was essential to repeat this preliminary experiment and further to plan a third one, which should concern itself with the relation of subcutaneous to organ immunity within the same animal. The second experiment is reproduced in Fig. 2, and is in all respects a

FIG. 2.

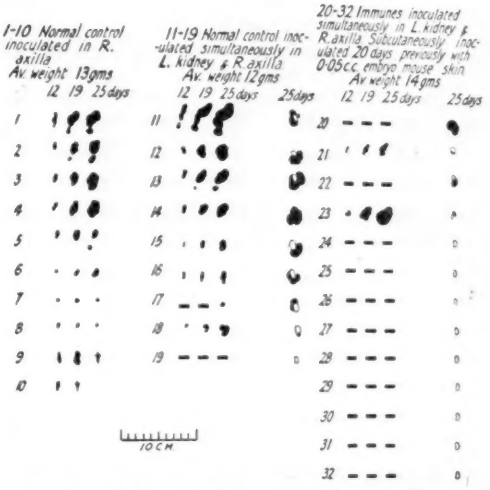
1-14 Normal control inoculated in R. axilla Av. weight 14gms
11 18 25 days
15-29 Normal control inoculated in L. kidney Av. weight 16gms
25 days
30-42 Immunes inoculated in L. kidney Subcutaneously inoculated 20 days previously with 0·05 c.c. embryo mouse skin. Av. weight 15gms
25 days
10 C.M.

Experiment 63/49 J. All mice inoculated May 26th, 1911, with 0·01 c.c. The black silhouettes represent the tumours and the kidney-shaped outlines the kidney. In the first column (1–14) the progressive growth of the subcutaneous tumours is depicted at three successive chartings up to the twenty-fifth day after inoculation. In the second column (15–29) is depicted the result 25 days after inoculating the same tumour into the kidney of normal mice, and in column 3 (30–42) into the kidney of immune mice. Note the marked resistance in the latter.

replica of the first, except that there is given the result of inoculation of the tumour into the axilla of normal mice. One notices, first, that of these, excluding three mice (Nos. 12, 13, and 14) which died before the third charting of their tumours, 100 per cent. developed growths, and an indication is thus afforded of the proliferative power of the tumour under discussion when implantation is made at the site usually selected. Among the series inoculated in the kidney, transfer of the tumour was successful in 87 per cent., and in passing it is of interest to observe that the size of the tumours growing in this location is not exceeded by those in the axilla. That inoculation may be made successfully into the abdominal organs is a fact which is generally known. The important feature of the experiment falls in the third column and is an entire substantiation of the result pictured in Fig. 1. While 87 per cent. of the normal mice developed tumours of the kidney consequent upon inoculation into that organ, the animals subcutaneously immunised fell far short of this percentage, only 23 per cent. of them presenting growths on the twenty-fifth day.

A third experiment (Fig. 3) completes the chain of evidence, and showing as it does the result of simultaneous inoculation into kidney and axilla in normal and immune animals, permits us to draw certain conclusions regarding the general distribution of the immune state throughout the animal's body. Among nine normal mice (Nos. 11 to 19) inoculated in axilla and kidney there occurred tumours in both locations in 89 per cent., while in the only case in which no tumour was present in the axilla the attempt to inoculate the kidney was also negative. Contrasted with this result is that set forth in the last two columns. In mice subcutaneously immunised, and similarly inoculated, tumours were present in the kidney in only 31 per cent., and, although it is true that in two of the mice (Nos. 20 and 22) which did not develop axillary tumours there had been no bar to the growth of tumours in the kidney, yet it is contended that this was a

FIG. 3.


1-10 Normal control inoculated in R. axilla Av. weight 13gms
12 19 25 days
11-19 Normal control inoculated simultaneously in L. kidney & R. axilla Av. weight 12gms
12 19 25 days 25days
20-32 Immunes inoculated simultaneously in L. kidney & R. axilla. Subcutaneously inoculated 20 days previously with 0·05 c.c. embryo mouse skin. Av. weight 14gms
12 19 25 days 25days
10 C.M.

Experiment 63/49 I. All mice inoculated May 25th, 1911, with 0·01 c.c. The black silhouettes represent the tumours and the kidney-shaped outlines the kidney. Similar experiment to that depicted in Fig. 2, but the mice were tested both by subcutaneous inoculation and by implantation into the kidney, in order to show the parallel distribution of resistance throughout the body brought out by columns 4 and 5 (mice 20–32).

fortuitous circumstance which in no wise invalidates our reading of the result of the experiment.

One feels justified in inferring from the experiments above set forth that the immune state is one of general distribution throughout the organism and not of local occurrence at the site of the immunising inoculation, without wishing, however, to have this conclusion applied to the zonal immunity described by Sticker.[2]

The expense of this investigation was partly borne by the Crocker Cancer Research Fund of the College of Physicians and Surgeons, Columbia University, New York.

[2] Münchner Medicinische Wochenschrift, 1906, lxxviii., 1904.

THE SOUTHWARK GUARDIANS AND DISSECTION.—At a meeting of the Southwark board of guardians on Thursday, June 29th, the following letter was read from Mr. F. G. Parsons, secretary to the anatomical committee at St. Thomas's Hospital: "It has been reported to me that the Southwark board of guardians has withdrawn its permission for unclaimed bodies to be sent to the London schools of anatomy. This, if true, will cut off one-tenth of the supply and seriously handicap medical education in London. Would you, therefore, kindly tell me whether there is any truth in it, or whether the board has any cause of complaint of the way that bodies entrusted to the various licensed teachers of anatomy are treated? In the event of permission having been withdrawn, will you kindly send me a list of guardians, since their action would be of the very gravest importance to the University of London and should be laid before them in all its bearings." Mr. C. W. Matkin, the vice-chairman of the board, inquired whether only ten boards of guardians in London sent bodies of the friendless to the schools of antomy. The clerk replied that he could not says Mr. F. Haines said he was not ashamed of his action in voting for the abolition of the practice, nor of supplying his name and address. Mr. Matkin: They can obtain our names without coming here. Mr. W. Hills: I do not think we have the slightest objection to our names being seen in print. The clerk was instructed to inform Mr. Parsons of the guardian's decision to discontinue sending bodies of the friendless to any school of anatomy, but not to give the names and addresses of the guardians.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

Division of Posterior Spinal Nerve Roots for Pain, Visceral Crises, &c.

A MEETING of this section was held on June 13th, Mr. RICKMAN J. GODLEE, the President, being in the chair.

Mr. E. W. HEY GROVES read a paper on Division of the Posterior Spinal Nerve Roots for Pain, Visceral Crises, &c., which is printed in full in this issue of THE LANCET, p. 79.

Professor FÖRSTER of Breslau discussed the subject in a paper which is published in full on p. 76 of this issue of THE LANCET.

Dr. OTTO MAY showed a case of Little's disease in a small boy who was a premature child, one of twins, who from birth onwards showed well-marked spastic jerks. Medicinal measures having been of no avail, he suggested that the operation of Professor Förster should be performed to enable the boy to walk, and there seemed a prospect now that that operation had been done by Mr. H. S. Clogg that he would be able to walk moderately well, but it was as yet only a short time since the operation. (This case will be found described in THE LANCET of June 3rd, 1911, p. 1489.)

Mr. C. A. BALLANCE desired, before mentioning the two or three cases which he had had bearing on the present discussion, to say what a great personal pleasure it had been to him to listen to the splendid scientific address of Professor Förster, and to express the hope that in the future the Surgical Section of the Royal Society of Medicine would learn the great advantage of inviting our distinguished *confrères* from foreign countries from time to time to join in the discussions and teach English surgeons so much of their work in the way in which Professor Förster had done that day. He was there by request of the President, having had no experience of division of posterior roots for spastic paralysis or gastric crises. The first case in which he divided a posterior root occurred many years ago in a patient of Dr. Risien Russell. The patient was a woman aged about 35, who suffered from herpes in the distribution of the first dorsal root, along the inner border of the forearm, and when he saw her there were certain scars and marks of the previous herpes, which remained after the attack had subsided. But since subsidence of the attack she had suffered in the distribution of the first dorsal root from considerable pain and the area was hyperæsthetic. He divided the first dorsal root on that side, and in doing so he relieved the pain completely. It was at the time that Professor Sherrington was working at the distribution of the posterior roots, and he came many times to examine that patient; and if he had been present at that meeting he could have told members a great deal more about the sensation in the part supplied by the first dorsal root than he (Mr. Ballance) could do. But Professor Sherrington determined that there was a fourth form of sensation, or some new form of sensation which he had never been able to discover before. The exact details of that he would not enter into, but in the periphery of the anæsthetic area the patient was enabled to recognise the burn from a nearly red-hot wire. He did not know whether Professor Sherrington had made any further experimental investigation on the matter, but at that time he was very much interested in it, and he remembered his great anxiety to publish an account of the new form which he had apparently discovered in that first case of division of the first dorsal region. The result of the operation was completely successful. The hyperæsthesia disappeared and all the pain disappeared, and the patient was cured. The case he saw next he did not operate upon, but as he saw it he felt at liberty to mention it. It was the case of a lady whom he saw with Sir David Ferrier and afterwards with him and with another physician and Sir Victor Horsley. She had hyperæsthesia of the sole of the right foot corresponding to the distribution of the posterior root of the first sacral nerve, and she was not able to get about. The hyperæsthesia was not absolutely constant, but whenever it was present in the sole of the foot it was impossible for her to walk about. At that time she was averse to operation, but later on Sir Victor Horsley divided the posterior root of the first sacral nerve of that side, and he heard a year afterwards that she was cured. There was at first some difficulty in getting about because of the anæsthesia of the sole of the foot, but he thought that was overcome and all the distressing pain and the hyperæsthesia in the sole of the foot removed. The third case was that of a young woman of 22. She was under the care of a medical man at Felixstowe. Mr. Ballance saw her last year. When she was a year old she had tuberculosis of the fourth metacarpal bone of the right hand, and there was a considerable scar over that region. There was for many years pain in the scar, and when she had that pain she was unable to do anything which she had been previously accustomed to do. She was neurotic, and since 1893, 10 years before he saw her, she had suffered from epilepsy. The question was whether that painful scar had anything to do with the epilepsy. Convulsions occurred about four times a year, and she had been treated for many years by bromides. She had been seen by a number of physicians, and two years before he saw her Sir Victor Horsley had divided the dorsal branch of the ulnar nerve, which was distributed to the region of the scar over the fourth metacarpal bone. He believed the operation gave some relief at first, but apparently resulted subsequently in an increase of pain. For 18 months before he saw her she had been in great distress on account of the pain in the scar, this pain having spread up the arm in the distribution of the eighth cervical root. He divided this root. There was no difficulty in doing that operation. Dr. Purves Stewart was present at the operation, and with him he took the opportunity of stimulating the anterior roots of the seventh and eighth cervical and also the first and second dorsal. The eighth cervical was the one divided. The triceps acted very powerfully, the pectoralis contracted, there was no flexion of the fingers, but there was extreme hyperpronation of the whole limb. In stimulating the anterior root of the first dorsal there was flexion of all the fingers, ulnar flexion of the wrist, the triceps contracted, and so did the rhomboids. There was no hyperpronation. With stimulation of the seventh cervical anterior root there was extension of the elbow, the pectoralis contracted, and there was hyperpronation. But below the cervical roots there was no hyperpronation and there was no flexion of the fingers until the first dorsal root was stimulated. The second anterior root was also exposed and stimulated, and in stimulating that there was only contraction of the intercostals. The patient was immensely relieved. Six months after the operation she had had no fit and had been able to return to her ordinary occupation. He had not heard of her since and he was sorry that, in view of the present discussion, he had not ascertained her later history. The fourth case was one in which he could not complete the operation. It was the case of a man who came to St. Thomas's Hospital last winter and who was nearly 20 st. in weight. Some years before he had met with an injury which necessitated amputation in the lower third of the thigh. He was a railway man. During the last two years he had suffered from intolerable pain in the stump. All sorts of drugs had been used, the nerve had been injected with alcohol, and the nerve excised as far as it was found in the stump, right up to the sacro-sciatic foramen. Therefore, after seeing him for some time and watching his distress and pain, it occurred to him that the only thing would be to attempt to divide the posterior roots corresponding to that limb. He decided to divide the posterior roots of the third, fourth, and fifth lumbar, and the first and second sacral. The stump was on the right side. In that way he covered the whole sensory distribution of the lower limb, without interfering with the sensory distribution in the genital and anal regions. The patient was anæsthetised, and he got through the eight inches of fat down to the lumbar spine, and managed to get away the laminæ of the second, third, fourth, and fifth lumbar vertebræ, but at that time the patient's condition was so bad that it was necessary to infuse him, and the wound was closed. There was great difficulty in reviving him; indeed, for some time he (Mr. Ballance) thought the patient was dead. Some weeks afterwards the wound was reopened with the intention of dividing the dura and those nerves.

But before he had got down to the dura the man's condition failed again and he could not open the dura. He did not feel that he was justified in doing a brilliant operation at the risk of killing the patient. The man had left the hospital and his doctor reported that he was still in great pain, but still, considering the grave condition in which he was when the other two operations were attempted and that there was considerable work for some hours in getting him back to life, it was not thought advisable to attempt anything further in the operative way.

Dr. PURVES STEWART said that the position of a physician who ventured into a surgeons' meeting was analogous to that of Daniel in the lion's den. But Daniel was cast into the lion's den, whereas he (Dr. Purves Stewart) was at this meeting of his own accord. He supported everything which had been said by Mr. Ballance about the papers which had been listened to. He (Dr. Stewart) had had three cases in which Professor Förster's operation had been carried out. The first and best was one of gastric crises in the person of a man 40 years of age who had intolerable vomiting of some months' duration with intense emaciation. In August, 1909, Mr. William Turner, of Westminster Hospital, divided the thoracic roots from the seventh to the tenth inclusive on both sides, and the result was the production of a band of anæsthesia such as Mr. Groves showed on the screen, from the xiphisternum to the umbilicus. It completely stopped the man's gastric crises; he rapidly put on weight and became a normal member of society. But in consequence of his occupation he developed another trouble—namely, alcoholic poisoning. The second case was one with tabetic lightning pains in both legs. The case came to the West End Hospital for Nerve Diseases. Mr. Wilfred Trotter divided the third lumbar roots and the result was practically *nil*. Some anæsthesia was produced in the area of the roots, but the pain continued. The third was a case of spastic paraplegia in a man who had syphilitic softening of his cord many years ago, and spasticity in his legs, without sensory changes, but with marked bladder trouble. The arms were normal. Mr. Trotter divided the first, third, and fifth lumbar roots on one side, and the second and fourth lumbar roots and first sacral on the other. The result was that the man, instead of walking with one toe just in front of the other, could now take steps three times as long as before, the spasticity was diminished, and he was so pleased with the result that he wanted to have further roots divided so that he might be further improved. The operation of Professor Förster was a very brilliant one, but, like all other operations, it was only suitable in selected cases, as Professor Förster himself pointed out. The cases *par excellence* where the operation was indicated were those of gastric crises. As Professor Förster had shown in numerous papers, the gastric crisis was a nerve storm of the reflex arc, or of several reflex arcs, and if such arcs were cut the storm ceased, because there was no longer a path in which it could travel. With regard to tabetic pains matters were different. Tabes was not simply a disease of the roots, but of the continuation of the roots in the spinal cord. Division of those roots for the pain in tabes could not be expected to cure the disease; the central parts of the roots still remained and still could cause pain. With regard to the treatment of the ataxia, to employ Professor Förster's operation for ataxia was unjustifiable, because it would tend to increase the ataxia. With regard to cases of spastic paralysis one must be very cautious not to employ Professor Förster's operation indiscriminately in all cases of spastic paraplegia, because in every case there were two elements, spasticity and paraplegia, and of those two elements Professor Förster's operation could only relieve the spasticity. If it was found on anæsthetising the cord with stovaine, as Professor Förster suggested, that there was still some voluntary power, it was worth while dividing the roots, and there would be that amount of voluntary power which the pyramidal tracts were capable of. But if a patient was idiotic or so severely paralysed that his pyramidal tracts were almost completely degenerated, it was not worth while removing his spasticity. That and athetosis were contra-indications of it, because the latter meant that the brain was degenerated, and no amount of posterior division would remove it. And, as Professor Förster pointed out, disseminated sclerosis or other central disease was a contra-indication for the operation.

Mr. D. M. AITKEN, referring to the great importance of after-treatment in cases of spastic paraplegia, said he had been watching these cases for the last 30 years, since he was house surgeon to Mr. Robert Jones of Liverpool, who treated those cases on orthopædic lines. He asked whether Professor Förster would draw the line between cases suitable for pure orthopædic treatment and cases in which he would at once go in for section of the roots? He thanked him for the splendid demonstration of results. With regard to reflex spasm, it was cases of that sort which Mr. Jones and he treated orthopædically, but in which Professor Förster divided the roots of the nerves. Were they the primary source of that spasm he would like to know with certainty. Was he right in assuming that that spasm came from the muscles themselves? And if that was so, why should not that be overcome by division and full stretching of the muscles? He was asking those questions entirely for information, because the cases he had seen numbered now about 50, and in some of them there was good recovery in the lower limbs. In the marvellous fourth case of Professor Förster the photograph showed that abduction of the thumb was very good. Spitza of Gratz had done much in transplantation of nerves in connexion with these cases, and as far as he could tell the great difficulty had been with the thumb. In the same way, the orthopædic difficulty had been to overcome the spasm of the thumb. He would also like to ask how soon the children operated upon could be got to use their thumbs. The hands were the most difficult part to treat.

Dr. C. M. HINDS HOWELL said he had at present under care a man who was a tabetic, with very severe gastric crises. He had been treated with every conceivable sort of medical method for these, and, finally, last summer he decided to have tried the operation of division of the posterior roots. Pain was the predominant characteristic of his attacks; the vomiting seemed to be secondary. The patient got some relief by making himself sick. The maximum point of pain was just above the umbilicus. The fibres which were divided by Mr. Warren Low at the Great Northern Hospital were the eighth, ninth, and tenth posterior divisions of both sides. The man recovered from the operation, but the gastric crises were not permanently benefited, though they were better for six weeks. He was having the crises at the rate of three or four a week. Possibly sufficient roots had not been divided, probably the seventh and eleventh should have been cut. But it did not follow that the gastric crises were simply due to irritation of the root outside the spinal cord. As Dr. Purves Stewart said, there was degeneration going on inside the cord, and he did not think one could separate off gastric crises from the lightning pains. The operation was not invariably successful for the lightning pains, and one could not expect it to be always so in gastric crises, and he did not think one should indiscriminately start cutting the posterior roots in tabes or gastric crises unless one had considered the matter very carefully indeed.

The PRESIDENT again thanked Professor Förster for coming so far to read his paper. He asked whether Professor Förster would advise as a routine matter division of the posterior roots in Pott's disease where there is much spasm. That was an operation which one frequently had to perform where spasm had been very marked, and his experience had been that the spasm had always subsided in almost all his cases. But in the last case but one which came under his care he could not say the spasm altogether disappeared when the patient left the hospital. One did not feel very keen about opening the theca when one was working in tuberculous abscess.

Professor FÖRSTER, in reply, said he advocated division of the posterior roots only in cases of extreme spasticity, but in ten cases operated upon by Küttner six were treated for a long time by ordinary orthopædic measures, but without success. It was difficult to decide immediately if a case was suitable for division of the posterior roots, and it was good to try orthopædic treatment first in all cases. Spasm of the adductors had been removed immediately by division of the posterior roots. Dr. Spitza of Gratz had done much work in implantation of the median nerve into the radial, and it was a very good idea, but the spasticity did not disappear. In Pott's disease division of the posterior roots should only be tried when one could be sure the disease was not going on more. If there was no certainty that the tuberculosis of the vertebral column was cured the posterior roots must not be divided. The only case

reported was one in which he and his colleagues tried first a laminectomy of the cervical region, but there was no good effect from it. Later division of the posterior nerve roots in the lumbar region was tried and the spasticity disappeared completely.

EDINBURGH OBSTETRICAL SOCIETY.

Chylous Mesenteric Cyst simulating Pelvic Tumour.—Repeated Cæsarean Section for Contracted Pelvis.

A MEETING of this society was held on June 14th, Dr. F. W. N. HAULTAIN, the President, being in the chair.

Professor J. A. C. KYNOCH (Dundee) read notes on a case of Chylous Mesenteric Cyst, simulating a Pelvic Tumour. He said that the most important physical signs of these cysts were: the most prominent part of the tumour was near the umbilicus; they were extremely mobile, so that the cyst might be readily pushed from one side of the abdomen to the other and to a certain extent up and down; and there was a note of resonance on percussion all round the tumour, with very frequently a resonant band crossing the swelling. The most outstanding symptoms were pain over the tumour, intestinal disturbances, attacks of vomiting, with persistent diarrhœa, and general wasting, due in all probability to interference with the lacteals of the mesentery. The patient was aged 37 years and had noticed a swelling increasing in size for three years. She had had three children, the labours being uncomplicated. In the hypogastric region a well-defined, tense tumour was palpated, nodular on the surface, and extending from the left iliac fossa to about an inch to the right side of the umbilicus; its mobility was very marked. There was a resonant percussion note round two-thirds of the tumour. Per vaginam, a cystic swelling of the size of a lemon was felt in the right fornix; it seemed to be intimately connected with the uterus. At the operation an ordinary multilocular cyst of the right ovary was found and removed. The uterus and left ovary were normal. The abdominal tumour had the appearance of a parasitic fibroid, but further investigation showed it to be situated between the layers of the mesentery of the lower part of the ileum. A small incision showed its contents to have a milky appearance, which on later investigation proved to have all the characters of chyle. The cyst was enucleated, the divided edges of the peritoneum being brought together by sutures, and a glass drainage-tube was inserted into the seat of the wound. The patient made a satisfactory recovery.—Dr. J. HAIG FERGUSON, Dr. J. W. BALLANTYNE, and the PRESIDENT made remarks on the subject.

Dr. JOHN MCGIBBON read a paper on Repeated Cæsarean Section for Contracted Pelvis, with notes of a case successfully performed for the third time on the same patient. He pointed out that the subject of repeated section had been discussed at various obstetrical societies during the past year. Routh, in a valuable and elaborate paper read before an International Congress of Obstetrics held at St. Petersburg last September, pointed out that the teaching of Mauriceau of Paris must have greatly influenced British obstetricians, and that his condemnation of Cæsarean section in 1752 had apparently the effect of holding British operators in check, as until 1821 only a few Cæsarean sections were performed, and all with one exception ended fatally. The conservative operation, with a mortality of about 90 per cent., still struggled on until 1876, when Porro introduced his method of supravaginal hysterectomy with extra-peritoneal treatment of the stump, which seemed as if it were going to displace the conservative Cæsarean section. In 1888 some successful conservative sections were reported and this operation gradually gained favour, the mortality steadily diminishing. Thus in 1890 the mortality had fallen to 38 per cent. and ten years later to 20 per cent. Now the mortality, if section was performed before labour, was 2·9 per cent. Dr. McGibbon's patient had her first labour terminated by craniotomy and her next three pregnancies by Cæsarean section. She had a generally contracted pelvis with a true conjugate of from 3 to 3¼ inches. The third operation revealed only a fine linear depression as the trace of the previous scar. There was no thinning of the uterine wall in the scar region and, contrary to the experience of many, there were no adhesions. When compared with premature labour as the operation of election in such a case, Cæsarean section had distinct advantages. The fœtal mortality of induced labour in a pelvis of from 3 to 3¼ inches was stated by some authorities to be not less than 10 per cent. In a series of cases induced in successive pregnancies by Dr. McGibbon the fœtal mortality had been practically *nil*, provided the labour ended spontaneously. When, however, after the induction, forceps were required the mortality was nearly 50 per cent. If at the thirty-fourth week the head could not be pushed through the brim, the chances of a spontaneous delivery with survival of the child after an induction became most uncertain, and then Cæsarean section became the operation of choice. For the performance of the classical Cæsarean section various incisions were proposed and practised, but the transverse fundal and the median longitudinal on the anterior wall were the only two much employed in this country. In recent years attempts by Frank, Sellhein, and others to perform an extra-peritoneal Cæsarean section had been carried out, the original aim being to empty the uterus in infected cases without contaminating the peritoneal cavity. Such methods had been disappointing, as they had been accompanied with various injuries to the peritoneum and bladder, and had had a morbidity of 30 per cent. Sellhein suggested the production of a utero-abdominal fistula in infected cases. The difficulty in the past had been with the doubtfully infective cases, but there seemed to be hope from recent bacteriological investigation that intra-uterine swabbings might identify the presence of pathogenic organisms and so indicate the course to be followed. Craniotomy was indicated in cases believed to be infected, as Cæsarean section became risky and craniotomy showed a smaller mortality. The question of adhesions between the uterus and abdominal wall had always been a source of anxiety to the operator. These would take place by accident in some cases. Wallace of Liverpool intentionally fixed the uterus to the abdominal wall with the object of being able to perform a future section without entering the peritoneal cavity. This procedure had been condemned by some as predisposing to rupture. The relation of repeated section to rupture was important. Mason and Williams, from experiments on animals, had concluded that a carefully united uterine scar would stand any strain which the uterine muscle was capable of enduring, and they maintained that rupture was dependent upon imperfect consolidation. It was an established fact that the mortality of repeated Cæsarean section was rather less than of the primary operation. It was not the duty of the surgeon to advocate sterilisation; he should lay the possible risks before every woman who came to him desiring a living child by repeated Cæsarean section and be ready to perform it on a third, fourth, or further occasions if requested by the patient to do so.—Dr. D. BERRY HART, Dr. HAIG FERGUSON, Dr. BALLANTYNE, Dr. W. FORDYCE, Dr. J. LAMOND LACKIE, Professor KYNOCH, and the PRESIDENT discussed the paper, and Dr. MCGIBBON replied.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on June 5th, Mr. T. Gunton Alderton being in the chair.—Mr. Leonard Bidwell read a paper on the Immediate and Ultimate Results after Gastro-enterostomy for Gastric and Duodenal Ulcer, basing the paper on 180 cases on which he had operated. The immediate mortality after the operation was about 7 per cent., but in most of the fatal cases the operation had been performed for hæmorrhage, the mortality in uncomplicated cases being practically nothing. Of the cases which recovered and could be traced, about 80 per cent. were completely cured, 10 per cent. were relieved, and 10 per cent. derived little benefit. Attention was drawn to the necessity for the occlusion of the pylorus in cases of duodenal and pyloric ulcer, since the operation of gastro-enterostomy alone was likely to be followed by a recurrence of the ulcer. It was also pointed out that gastro-enterostomy alone was useless in the case of an ulcer situated at a distance from the pylorus. In such cases it was advised that the ulcer should be excised at the same time that the gastro-enterostomy was performed. In conclusion, operation was recommended in every case of duodenal ulcer and in cases of gastric ulcer which had resisted medical treatment.—Dr. F. G. Crookshank considered that cases of gastric ulcer, if treated properly by drugs, &c., would not show a mortality anything like 10 per cent. The mistake in failing to diagnose

them properly accounted for many which ultimately required surgical treatment. With regard to duodenal ulcers he thought most cases with established diagnosis should be operated on early.—Mr. Walter E. Fry, Mr. R. Bevan, Mr. W. P. Mallam, and Mr. T. R. Atkinson joined in the discussion, and Mr. Bidwell replied.

UNITED SERVICES MEDICAL SOCIETY.—A meeting of this society was held on June 14th at the Royal Army Medical College, Millbank, Colonel Sir David Bruce, A.M.S., being in the chair.—Major C. F. Wanhill, R.A.M.C., read a paper on the Supply of Water in the Field. After pointing out the disadvantages of very large units, such as the brigade sterilising unit, he came to the conclusion that the best unit was a half battalion water-cart. The desiderata for such a cart were that it should be mobile, simple and rapid in action, and should not contain any fragile parts which if broken would render the apparatus useless. Taking these points into consideration, candle filters, ultra-violet ray apparatus, heat exchange sterilisers, and chemical methods of sterilising, were all unsuitable for the provision of large quantities of pure water in the field, though chemical methods had their uses in the purifying of small quantities of water for detached individuals. Experiments at the Royal Army Medical College and at Aldershot had resulted in the devising of an apparatus which depended for its action on the precipitation of the mud in the water by means of alum; the water so treated was passed through flannelette and the mud became deposited on the cloth, forming a layer which acted in much the same way as the zooglea layer on a sand filter. The clarified water which passed through had from 60 to 80 per cent. of the original germs removed, and if it was necessary to remove all the germs, as might happen in the presence of specific contamination, the clarified water could be further passed through porous candles. The candles which were used would only remove 30 per cent. of the germs in untreated water and they became blocked almost at once; but with clarified water the whole of the remaining germs were removed and the output, at the rate of 120 gallons per hour, was constant. Major Wanhill then gave a demonstration of the new water-cart.—Major W. S. Harrison, R.A.M.C., Colonel Ryan, Australian Army Medical Corps, and Colonel Sir David Bruce took part in the discussion.

Reviews and Notices of Books.

Modern Treatment: The Management of Disease with Medicinal and Non-Medicinal Remedies. In Contributions by American and Foreign Authorities. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica, Jefferson Medical College, Philadelphia; Physician to the Jefferson College Hospital. Assisted by H. R. M. LANDIS, M.D., Director of the Clinical Department of the Phipps Institute (University of Pennsylvania). In two volumes. London: Henry Kimpton. 1911. Vol. I., pp. 900; Vol. II., pp. 930. Price £3 net.

THIS work contains an immense amount of information and deals with all forms of therapautics. At one time the means at the disposal of the physician and surgeon consisted mainly in drugs, in climate, in hydrotherapy, and electrotherapy; but within the last 15 or 20 years the wide and fruitful fields of treatment covered by serum-therapy and the various vaccines have been developed, with a far greater approach to specific treatment than has ever been previously achieved. Further, during the time that these advances have been made the pharmacologist and the chemist have increased the materia medica, with the result that remedies are more thoroughly understood, new ones of great value have been evolved, and most of them can now be obtained in a form in which they can readily be made use of. The appearance of a work which places in the hands of the physician a competent summary of many of these advances is, therefore, timely, and the editors have succeeded in placing before the profession a most useful work of reference.

In an interesting preface Dr. Hare reviews some of the more prominent points connected with therapeutics in general. He draws attention to the relations that exist between the pharmacologist and the physician. If a given dose of a given remedy were always suitable for a given ailment there would be little need for the physician except as a diagnostician. It is the never-ceasing changes in all living persons and the different effects of disease in different individuals that confer value on the bedside experience of the medical man. The pharmacologist may lay down the fundamental processes, but the clinician must make the distinctions in their use which develop the desired results. The opinion expressed by Dr. Hare of the attitude which should be adopted by the competent medical man of to-day will be cordially and generally accepted. The practitioner must be a clinical investigator, who welcomes every gain in knowledge as an additional aid in his efforts to do good. He must ever be controlled in his practice by the fact that he is treating a patient, not a disease, a patient whose powers of dealing with a malady are marvellous, with an organism that is to be directed, not driven or forced, into the right path.

Dr. Hare has been wise in the selection of the contributors for the various articles. Thirty physicians have assisted in bringing this work into the form of a system of modern treatment. It would, perhaps, be invidious to pick out for comment any one or more of the contributions, but without detracting in any way from the others we would draw the attention of our readers to the following: The Untoward Effects of Drugs, by Dr. R. D. Rudolf (Toronto); Serum-Therapy, by Dr. W. H. Park (New York); Tuberculin as a Therapeutic and Diagnostic Agent, by Dr. F. M. Pottenger (Monrovia, Cal.); and Tuberculosis, by Dr. H. R. M. Landis (Philadelphia).

A full index is provided, which renders reference to any particular subject easy and rapid.

The Mechanism of Life. By Dr. STÉPHANE LEDUC, Professeur à l'École de Médecine de Nantes. Translated by W. DEANE BUTCHER. London: Rebman, Limited. 1911. Pp. 172. Price 6*s.* net.

Professor Leduc's physico-chemical theory of life and spontaneous generation has excited not a little opposition on the Continent. We question if in its English garb it will be hailed with enthusiasm either by biologists or physicists. It appears that in 1907 the Académie des Sciences did not include in its *Comptes Rendus* the author's work on Osmosis. We have travelled far from the days of John Hunter's "Vital Principle," and now for the "principle of life" we have "The Mechanism of Life," which is an attempt by a physicist to explain so-called living phenomena on physical lines. We are told that the step between a stalagmite and a polyp is less than that between a polyp and a man; that "what constitutes a living being is its form"; and that biology is but a branch of the physico-chemistry of liquids. As the basis of the author's doctrine is physical he gives an account of solutions, electrolytic solutions, colloids, diffusion and osmosis, periodicity, cohesion and crystallisation, karyokinesis, and energetics. This, with the introductory matter, occupies more than one-half of the text, which is illustrated by a number of figures showing liquid diffusion and various patterns produced by adding one chemical substance to another, whereby, as is well known, various forms of "artificial cells" and membranes can readily be produced. He goes even so far as to speak of a fringe of cilia obtained by sowing coloured drops of concentrated salt solution in a weaker salt solution.

The last 70 pages are devoted to what the author calls "synthetic biology." In this chapter, while the author

mentions Montgomery's paper (1867) on the Formation of So-called Cells, we failed to find a reference to Rainey's well-known work on a similar subject (1858), or to that of W. Miller Ord. We then come to what is called "osmotic growth, a study in morphogenesis," a chapter which is illustrated by a large number of figures showing the outward similarity of many of these so-called growths or formations to various familiar botanical and zoological forms. Stem-like forms are produced by sowing a mixture of $CaCl_2$ and $MnCl_2$ in a solution of alkaline carbonate, phosphate, and silicate, terminal organs, like catkins, developing in a solution of ammonium chloride; we have also osmotic madrepores and mushrooms, and so on. The author hopes to find in the play of these physico-chemical forces the road which will lead some day to the discovery of the origin and the evolution of life upon the earth.

Diseases of the Spinal Cord. By R. T. WILLIAMSON, M.D. Lond., F.R.C.P. Lond., Assistant Physician, Royal Infirmary, and Lecturer in Medicine, Victoria University, Manchester. Oxford Medical Publications. Second Impression. With 183 illustrations and 7 plates. London: Henry Frowde and Hodder and Stoughton. 1911. Pp. 432. Price 15*s.* net.

THE second edition of this excellent text-book has been enlarged by the inclusion, in an appendix, of paragraphs relating to epidemic poliomyelitis, the operative treatment of gastric crises in tabes dorsalis, of spinal serous meningitis and of spastic paraplegia, and the X ray treatment of syringomyelia. Dr. Williamson still adheres to the description of "ataxic paraplegia" as a separate entity, although the microphotographs of the condition which he furnishes are suggestive of subacute combined degeneration of the cord. He maintains, further, that progressive muscular atrophy and amyotrophic lateral sclerosis are pathologically distinguishable, but the evidence cannot be said to be entirely convincing. Some of the diagrams, for instance Fig. 22, are not, perhaps, quite so clear as the beginner in neurology might desire. The statement that "it has been frequently observed that syringomyelia has followed injury to the back" surely requires some substantiation. The rôle of trauma in syringomyelia is most debateable; even the cases reported in Guillain's well-known "Thèse de Paris" of some ten years ago are open to question, and they were cases observed and examined with the greatest care and insight. Criticisms such as the above, however, are of minor significance in view of the general excellence and comprehensiveness of the volume, which can be recommended confidently to student and practitioner alike.

Traité d'Histologie. Par A. PRENANT, Professeur à la Faculté de Médecine de Paris; P. BOUIN, Professeur à la Faculté de Médecine de Nancy; et L. MAILLARD, Professeur Agrégé de la Faculté de Médecine de Paris. Tome II., Histologie et Anatomie Microscopique. With 572 figures in the text, of which 31 are printed in colours. Paris: Masson et Cie. 1911. Pp. xl. + 1200. Price 50 fr.

THE authors are to be congratulated on the appearance of this, the second, volume of the French standard treatise on histology. The first volume has already been published, and it deals exhaustively with general and special cytology; the present volume completes the work and treats of histology and microscopical anatomy. M. Prenant and M. Bouin are the authors of this portion of the work, which fully maintains the high standard reached by its forerunner.

The work is divided into ten books, comprising some 60 chapters, and when it is stated that the entire volume contains 1240 pages and 572 illustrations, some idea may be gained of the thoroughness with which the subject is treated. Indeed, the undue bulk of the volume is the only criticism we would level against this excellent treatise, for a paper-covered octavo volume over three inches thick is not at all convenient to handle. The illustrations are uniformly good, nearly all of them are original, and many are reproduced from excellent micro-photographs. The text is clear; the treatment is exhaustive and thoroughly up to date.

The schools of France are to be congratulated on the completion of this monumental treatise upon the microscopical structure of the body. In the Prenant-Bouin-Maillard Histology and the uniform Poirier-Charpy-Nicolas Anatomy France possesses the best modern treatise upon gross and microscopic anatomy published in any language.

Text-book of Nervous Diseases, for Physicians and Students. By Professor H. OPPENHEIM of Berlin. Fifth enlarged and improved edition, with 432 illustrations in the text and 8 plates. Authorised Translation by the late ALEXANDER BRUCE, M.D. Edin., F.R.C.P. Edin., LL.D., Physician to the Royal Infirmary, Edinburgh. In two volumes. Edinburgh: Otto Schulze and Co. 1911. Pp. 1424.

THE desire of the translator of Professor Oppenheim's well-known text-book has been to render a work that enjoys so high a reputation more accessible to English and American readers. Every endeavour has been made to reproduce the meaning of the German text exactly and clearly, and in conformity with Professor Oppenheim's wish the volumes have not been in any way edited. But those who are familiar with previous editions of the text-book will note with pleasure that the value of the present edition has been considerably enhanced by the inclusion of numerous bibliographical references, which have been chosen with noteworthy judgment. The most important and valuable articles on each subject is quoted, as well as the monographs and *résumés*, from which the reader can conveniently trace his way back to the older literature. The subject-matter of the book has been enriched by taking into consideration all recent advances in the study of nervous diseases and their treatment. The illustrations have been augmented and X ray photographs have been incorporated. In these two handsome volumes, then, the practitioner and the student will find their respective neurological needs adequately catered for, and the specialist himself may consult them with advantage, inasmuch as they contain the results of the lengthy clinical and pathological experience of one who has devoted his life to the elucidation of nervous disease. The responsible task of translating has been accomplished with conspicuous success by Dr. Bruce, whose recent death is greatly to be deplored. Presented in this guise to English readers, Oppenheim's text-book should increase its already wide popularity, while its introduction to a larger circle of readers marks another step in the steady advance which neurology is making.

Die Zeugung beim Menschen. (*Generation in Man.*) By Dr. HERMANN ROHLEDER. With an appendix on Artificial Impregnation in Man. Leipzig: Georg Thieme. 1911. Pp. 290–777. Price M. 7.

IN this book the author considers the question of generation in the human subject primarily, and more especially the possibility of artificial impregnation in the human female and the many moral and legal questions concerned therewith. After a section devoted to a consideration of the process of generation in general and its laws, the second section of the book is devoted to the many questions associated with its physiology. This includes an account of the nature and development of the semen, the physiology of erection of the penis and ejaculation, the functions of the prostate and of the glands of Cowper. Menstruation and ovulation are then

discussed in detail, and finally insemination and fertilisation. Such important questions as fertility and sterility are also considered, and the problems of super-fecundation, super-fœtation, heredity, and the determination of sex. The author next takes up the pathology of generation and the many etiological factors concerned therewith.

The appendix deals very fully with the question of artificial impregnation in the human subject. After some pages devoted to a consideration of sterility Dr. Rohleder passes on to discuss the indications and contra-indications of this procedure. The technique of the operation and the methods of carrying it out are all described. Its results are also considered and its relation to religion and the morals, both of the individuals concerned and of the medical man who practises it. The author maintains that a medical man is right in employing this means of correcting sterility, that it is a helpful therapeutic measure, and that he is, indeed, bound in any given case, if need be, to try this method when others fail. It is obvious, therefore, that Dr. Rohleder takes up a very strong position on this point, and he has himself carried out the procedure in some six cases. In four of these cases there was no result, in one case a possible miscarriage after a period of amenorrhœa of five and a half weeks' duration, and in the last case a successful result, the woman giving birth to a healthy child at full term. The question of artificial impregnation hardly deserves the amount of attention the author has given it, but for a full discussion of the whole subject from all points of view anyone interested in the matter may refer to this very complete work. In conclusion, the author considers that the method is of importance, not only from the point of view of the individual, but also from that of the nation, since in it he sees a possible remedy for the 10 per cent. of sterile marriages, which he regards as a national calamity.

LIBRARY TABLE.

Care of the Patient: A Book for Nurses. By ALFRED T. HAWES, A.M., M.D. With 6 illustrations. Philadelphia: P. Blakiston's Son and Co. 1911. Pp. 173. Price $1.00 net. —This little work is primarily a text-book of medical, surgical, and maternity nursing for American nurses, and is in many respects a useful compilation. The success or failure of medical treatment to a great extent often depends on the nurse. A physician may outline medical treatment and a surgeon may operate successfully, but the patient's recovery depends frequently on the skilful performance of the details of nursing. Where a surgeon has to leave many details before and after operation to a nurse, an unclean instrument, carelessness in preparing surgical dressings, the omission of any one of the numberless details in preparing a patient for an operation, may cause disaster and turn the scale against the patient's recovery. For this reason any thoughtful addition to the scientific aspects of nursing from the pen of a medical man is welcome. Many of the procedures are described rather minutely, but in skilled nursing it must be admitted that no detail is so trivial that it can be neglected. The text is methodical in its arrangement, the type is good, and there is a satisfactory index.

Outlines of Medical Jurisprudence and Treatment of Poisoning. By RAMES CHANDRA RAY. Calcutta: Published by the Author from the Hare Pharmacy. 1910. Pp. 244. Price 2 rupees.—This volume is intended mainly for the use of students and practitioners in India. The author shows considerable ability and a thorough knowledge of the subject in the way in which he has compressed so much information into a comparatively small space. He remarks that "we are a fast-living generation, living in the days of tabloids, and having just enough time to be contented merely with bird's-eye views of subjects." He, therefore, suggests that this book may be considered a tabloid of jurisprudence, suitable for a medical jurist in an out-of-the-way "mafossal" station where he has no more pretentious books at hand. The subject matter has been admirably arranged, and the free use of comparative tables greatly aids in the explanation of the numerous problems that may arise in medico-legal work. We believe that the book will be found of great value by those for whom it is intended. Students in this country also would find it of use in refreshing their memories after studying the larger text-books on the subject.

Sight Testing Made Easy. By W. WRIGHT HARDWICKE, M.D. St. And., M.R.C.P. Edin., L.R.C.S. Edin. London: J. and A. Churchill. 1910. Pp. 76. Price 2*s.* 6*d.* net.—This little book may prove useful to the general practitioner as a stimulant to memory, provided he has had a good grounding in refraction. It may also prove a useful help as an introduction to the study of refraction by the student. The present edition has added to the subjective sight testing to which the former edition was confined some notes on retinoscopy, the objective form of sight testing.

Health Hints and Health Talks. By E. R. PRITCHARD, Secretary of the Chicago Department of Health. Chicago: The Reilly and Britton Co. 1911. Pp. 153. Price 50 cents. —This little book contains much useful health knowledge for the laity, written in a breezy and interesting style, as befitted material that was originally compiled in accordance with the scheme of general hygienic education so well carried on by the Chicago Department of Health. These hints and talks appeared in the *Chicago Tribune* and other newspapers, and are now collected into an attractive little volume for discursive reading by a wider circle of readers. They contain essentially practical advice to be intelligently carried out, rather than platitudes to be read and forgotten; and they embrace so large a field that there are few, whether laymen or general practitioners who have to advise laymen, who will not benefit by the perusal of them.

The Pharmacopœia of the Queen's Hospital for Children (formerly the North-Eastern Hospital for Children). Compiled by a Committee of the Medical Staff. Fifth edition. London: H. K. Lewis. 1911. Pp. 73. Price 2*s.* 6*d.* net.—All practitioners who have much to do with children's ailments, and [that includes most of those medical men in wide general practice, will find many useful suggestions in this little pocket formulary. In addition to the approved formulæ used at the hospital, it contains much useful information on the care and management of children, both in health and in those forms of disease to which they are especially liable, as well as the customary tables.

The Girls' School Year Book (Public Schools) 1911. London: The Year Book Press. Pp. 606. Price 2*s.* 6*d.*— This is the official book of reference of the Association of Head Mistresses, and contains concise accounts of many matters connected with the education of girls which will be useful both to parents and teachers. The book is divided into two parts, the first of which contains a list of the leading girls' public schools—i.e., schools having a governing body, as distinct from private institutions, with information as to staffs, examinations, scholarships, fees, and so forth. The second part is devoted to a series of articles on various subjects, including professions and occupations suitable for girls, with the qualifications necessary and the cost of training.

Across the Bridges. By ALEXANDER PATERSON. London: Edward Arnold. 1911. Pp. 273. Price 6*s.*—The more exact our knowledge of the home life of the poor and of influences for evil which surround the growth of the child,

the more easy will it be to apply practical remedial measures to the very pressing problems of social reform, though it must not be forgotten that all satisfactory solutions of social questions must ultimately depend upon a general quickening of the responsibilities, not of any one class, but of the whole community. Mr. Alexander Paterson, who has spent many years among the poor in South London, has given us in "Across the Bridges" a vivid description of life among the poor in the squalid districts on the south side of the Thames, from birth to marriage, death often taking place in the workhouse, the hospital, or the street. Particularly valuable is the chapter on school influences, in which the author rightly points out that the primary object of a school is not to convey knowledge or teach a trade, but to make boys into men, a very difficult task when it is remembered that among the class described the boy "will look to become a man at the age of 14." Moreover, in the elementary schools the teachers are only teachers and never, save in a few rare instances, masters, as that term is understood in our public schools, where the master can mould and develop a boy's life. Mr. Paterson recognises the great utility of medical inspection in the schools and believes that the most beneficial of school influences lie in the direction of health. For "Across the Bridges" there is a great waste of life which, given other environment, would develop into a valuable asset to the State. The Bishop of Southwark, who writes an introduction to the book, states an important truth when he says: "There is no lack of sympathy in English hearts; there is a great lack of mutual knowledge in different classes. The increase of such knowledge is among the very first of our national needs." The sketches which Mr. Paterson has drawn of a certain phase of London life should do much to supply that knowledge within their indicated limits.

Progressive Medicine: A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, &c. Assisted by LEIGHTON F. APPLEMAN, M.D. Vol. IV., December, 1910. London: Rebman, Limited. Pp. 360. Price annually £2 net, or 12*s.* per volume.—The volume before us deals with diseases of the digestive tract, with diseases of the kidneys, with genito-urinary diseases, with the surgery of the extremities, and with recent advances in therapeutics. The article on the digestive system is by Dr. R. S. Lavenson, and contains an interesting review of papers dealing with dilatation of the œsophagus, with gastric ulcer, with the diagnosis of carcinoma of the stomach, and with the form of dyspepsia associated with chronic disease of the appendix. It is the opinion of the author that Cammidge's reaction is not of diagnostic value, depending largely on the food consumed, and the introduction of magnesium salicylate as a remedy for flatulence. The kidneys are dealt with by Sir John Rose Bradford, who discusses recent work on vascular hypertension, on albuminuria as a sequel of nephritis, on infection of the urinary passages by bacillus coli, and the formation of calculi. In the chapter on the surgery of the extremities, written by Dr. Joseph C. Bloodgood, the value of tincture of iodine as a first application to wounds is recorded, and much work dealing with military surgery is analysed. The almost invariable occurrence of infective processes after gunshot wounds is emphasised, the dangerous organisms being those of tetanus and of malignant œdema. Successful transplantation of joints is recorded, and the method of interposition of tissues after resection to maintain the mobility of articulations. Dr. W. T. Belfield, who writes on genito-urinary surgery, calls attention to the recent view that hydronephrosis may ensue after an acute total blockage of the ureter, and to the use of vaccines in urinary work. He also analyses papers dealing with the influence of the secretions of the ductless glands, especially of the adrenal bodies, on the sexual organs. Recent advances in therapeutics are discussed by Dr. H. R. M. Landis. We may mention among the subjects alluded to the use of acetone in inoperable cancer and the employment of adrenalin in cases of plague. This digest has now established itself as a most important summary of medical and surgical progress, and might well find its way to the bookshelves of all who wish to keep abreast with the advance of science. It is well printed and got up, and contains many illustrations, some being in colours.

Talks About Ourselves: Simple Lessons in Hygiene and Physiology. By KATHLEEN FALMOUTH. With a frontispiece by T. C. GOTCH. London: George Routledge and Sons, Limited; New York: E. P. Dutton and Co. 1911. Pp. 350. Price 1*s.* 6*d.* net.—Lady Falmouth is to be congratulated upon a thoroughly sensible little work. The "talks" are intended to assist parents and teachers as well as to instruct boys and girls, and they make up a book which is a happy blend of thoroughness and simplicity. A really intelligent child, reading the book carefully, would obtain unaided a rough grasp of physiology, while the parent and teacher will find in the different chapters material out of which valuable lessons to pupils can be constructed, and apt replies derived for response to the ordinary questions asked by children of their seniors. Lady Falmouth in her preface modestly disclaims originality for her teachings, and it is true that all standard books on elementary physiology cover much of the ground over which she has gone; at the same time, as far as we know, her methods of presenting physiological facts are quite original, while they are devised in the proper way to arrest the reader's attention. The last sections of the book, entitled "A Parable from Nature," "Life," and "Character Building," form a sort of moral of the "talks," and there is no doubt that children who have been brought up to regard life from the standpoint indicated in these pages will be extremely likely to make good citizens and happy and healthy individuals. There is an adequate glossary, and the pictures fulfil their proper function in that they really elucidate the text.

The Land of Promises. By STANLEY PORTAL HYATT. London: T. Werner Laurie. 1911. Pp. 293. Price 6*s.* net.—In this, his latest novel, Mr. Stanley Hyatt in no way falls short of the vivid description and terse diction of his previous performances, but in "The Land of Promises" his dislike for methods which have been used in the government and development of South Africa, and his objection to certain forms of missionary work, lead to the introduction of details which impair an otherwise good story well told. The story centres round a problem in heredity, and shows how an inherited predisposition may be subdued, and perhaps conquered, by early training and environment, especially when helped by an inbred sense of honour, by self-reliance, and by the love of a noble woman. The reverse of the picture is also well brought out. Hatred of hypocrisy sometimes leads the author to be harsh in his judgments, but allowing for this the novel is well worth reading.

JOURNALS AND MAGAZINES.

Edinburgh Medical Journal.—On June 7th, 1811, occurred the birth of Sir James Y. Simpson, and the present being the centenary year the June issue of this magazine is mainly devoted to reminiscences and appreciations of the great obstetrician. Personal recollections are contributed by Miss Eve Blantyre Simpson, his daughter, and by Sir

Alexander R. Simpson, his nephew. Dr. Joseph Anderson, professor of antiquities in the Royal Scottish Academy, discusses Simpson's work in archæology; Sir Halliday Croom writes on his influence on the progress of obstetrics; and Dr. A. H. Freeland Barbour on his position as a gynæcologist. Dr. D. Berry Hart deals with his work in the introduction of anæsthetics and with other of his scientific writings, while Dr. J. W. Ballantyne writes of his contributions to antenatal pathology. The same number of this journal contains Sir Alexander R. Simpson's address to the Harveian Society entitled, "Life and its Epiphanies." Dr. D. Berry Hart contributes an important paper on Diffuse Adenoma of the Vagina, of which Dr. F. W. N. Haultain records an instance in a separate contribution. Dr. R. W. Johnstone writes on eclampsia originating in the puerperium, which he regards as due to a poison of feeble potency, unable to act until the nervous system is worn out by the strain of labour.

Dublin Journal of Medical Science.—In the June number Mr. J. Spencer Sheill records some striking cases both of failure and success occurring in his experience. Dr. W. M. Crofton discusses the etiology and treatment of diabetes mellitus, which he regards as due to the absence of a co-ferment manufactured by the pancreas, and accordingly treats by preparations of this gland. Dr. G. Arbour Stephens discusses the *modus operandi* of vaccine treatment and suggests an analogy with reverse fermentation.

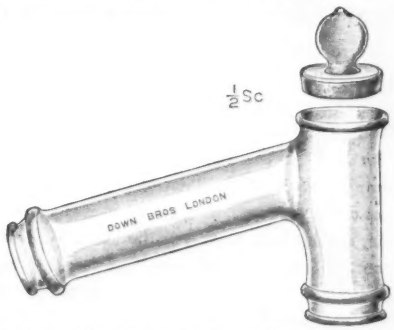
Birmingham Medical Review.—In the issue dated June 15th Dr. Thomas Wilson writes in praise of Pfannenstiel's suprapubic transverse fascial incision for operations on the pelvic organs. Dr. T. Gwynne Maitland deals with the therapeutics of suggestion, and concludes that it is impossible to introduce this method as a branch of recognised medical treatment.

Annali di Medicina Navale e Coloniale. Vol. I. Fasc. III. March, 1911.—This issue, which, despite its date, has only just reached us, contains an interesting account by Dr. G. Saccone of the precautions taken to prevent cholera infection among emigrants proceeding from Naples to South America last autumn when, it will be remembered, a sharp outbreak of this disease occurred in Southern Italy. The *Marsala* was used as a quarantine vessel, provided with all requisites for disinfection and with a bacteriological laboratory for diagnostic purposes; she was anchored close to the disinfecting station at the Mole of San Vincenzo in the port of Naples for four months; the total number of emigrants received is not stated, but although very many came from infected places, and about 1 per cent. were found to be carriers of the cholera spirillum, not a single case of the disease occurred on board owing to the thoroughness of the precautions adopted. Professor T. Rosati writes on the formation of a "sanitary conscience" among the people, beginning in the school, and developed in military employ, as well as in the extensive emigrant service. Three cases of "climatic bubo" (so-called) on board ship are related by Dr. G. Serra, and their relation to pestis bubonica (present in South American ports that had been visited) discussed. There is also an account of the plague epidemic in Manchuria by Dr. di Giura, who, dating from Peking at the end of February, states *inter alia* that serum and vaccine treatment had had negative results, and that inoculation was favoured by most Manchurian practitioners. Haffkine's treatment had not had such good results as in India; the best preventive measures were those that attacked the infection at its seat of origin—e.g., burning corpses and destruction of infected dwellings. Although plague symptoms were noted in rats and other animals, these were not considered to have any importance in spreading the epidemic.

New Inventions.

A NEW COLOSTOMY TUBE.

THE tube here illustrated has been made for me by Messrs. Down Bros., Limited, of St. Thomas's-street, London, S.E. A purse-string suture is run in the wall of the intestine which requires opening, and drawn tight over the lower end of the tube, the ends being tied and again bound round the end of the intestine and tube. The wound is then closed and



dressed, after which the tube is gently raised, the stopper removed, a knife or cautery inserted, and the intestinal wall incised, being steadied by a sharp hook if necessary. There is no hæmorrhage as it is controlled by the ligature surrounding the bowel and tube. In this way absolute asepsis is preserved till after the wound is dressed and the tube fixed.

J. C. F. D. VAUGHAN,
Surgeon, R.N.

Ashburton.

ANTHRAX AT BRADFORD.—At a meeting of the Anthrax Investigation Board, which was held at the Bradford Chamber of Commerce on June 29th, it was reported that since May 15th three cases of anthrax had occurred: two of malignant pustule, both of which recovered, and one of the pulmonary variety, which ended fatally. Dr. F. W. Eurich said that a further series of experiments had been conducted with a view of determining whether anthrax germs would spread within a bale when water-damaged, and it had been found that though the bacillus might multiply locally, it did not pass deeper than about 1 c.m. into the surrounding material. In a discussion on the three reported cases the necessity for the elimination of all blood-stained material during the sorting process was emphasised, and the board decided to urge through the press the advisability of sorters in their own interests picking out all such material. Since the meeting a case of anthrax has occurred at Knayton, near Thirsk, the patient having presumably contracted the disease as the result of skinning a beast which was recently slaughtered and afterwards found to be suffering from anthrax. The patient is progressing favourably.

DONATIONS AND BEQUESTS.—By the will of the late Mrs. Ellinor Arbuthnot the testatrix bequeathed £500 each to King Edward's Hospital Fund, the Guildford County Hospital, and the East London Nursing Fund.—The late Miss Maria Goodenough Cox has bequeathed £3000 to the Taunton and Somerset Hospital.—Among other bequests the late Mr. Henry Kirk has left £5000 upon trust to pay the income to the Nottingham General Hospital, £1000 to the Nottingham General Dispensary, £300 each to the Nottingham Blind Institution, the Nottingham Children's Hospital, the Nottingham Hospital for Women, the Mablethorpe Convalescent Home, and the Skegness Convalescent Home, and £200 to the Nottingham Eye Infirmary.—The late Mrs. Mary Ann Routledge has bequeathed £1200 to the York County Hospital and £200 to the York Dispensary.—Under the will of Mr. William Jones the testator left £1000 each to the Southport Infirmary and the Southport Convalescent Home and Sea-Bathing Infirmary.—The late Mr. James Clason Harvie has left by will, among other large bequests, £3000 each to the Edinburgh Royal Infirmary and the Glasgow Royal Infirmary, and £1000 to the Royal Hospital for Sick Children, Glasgow.

THE LANCET.

LONDON: SATURDAY, JULY 8, 1911.

The National Insurance Bill.

WE have received again this week letters from correspondents of all descriptions dealing with the National Insurance Bill, but there does not seem to us any necessity for publishing them save one or two, for no new points were brought forward by the writers. All very strongly supported some or other of the heterogeneous objections made by previous correspondents, and all in so many words, or by implication, agreed that time is wanted to consider the Bill. The outstanding lesson to be drawn on every side, and from every expression of opinion upon the Bill, is the necessity for time to discuss the varied and important issues raised by it—and this not only in connexion with the medical profession but in connexion with society at large. It seems now to be well known that many Members of Parliament, either on general grounds or special grounds, hold the view that the Bill is essentially one that should not be hustled through its various stages at all costs, to be set right somehow or other by new legislation later. We can quite understand the anxiety of the Government to have a measure which was received by the representatives of the people upon its introduction to their notice with such generous enthusiasm on both sides of the House. The Government may well consider that the people have practically commissioned the Executive to make the Bill into an Act with the shortest delay possible. Further, it may be pleaded that, as there are many interests involved of the sort which necessarily suffer during periods of anxiety, uncertainty, and transition, it is for the good of the majority that a definite solution of the difficulties should be arrived at with the minimum of delay. We can follow these arguments for expedition quite easily, but they are unsatisfactory, and have been so recognised by the Government, who suspended the Standing Orders of the House on Wednesday night so as to prevent interruption of the debate.

All political parties allow that a considerable number of men, for strong if conflicting reasons, regard with apprehension any rushing-through tactics in connexion with a measure which is going to cost the State an enormous sum of money and affect the relations of employer and employee in thousands of directions. That section of the public which takes due thought on political affairs, without being wholly subservient to party tactics, is probably on the side of the medical profession in hoping that there will be no stifling of debate on the measure, and no precautions spared lest clauses should find their way into the Bill which may be worked in opposition to interests the position of which has not been thoroughly ascertained. No one suggests that time, talent, ingenuity, and experience have not been employed in framing the measure—the public as well as the popular legislative assembly agree here—but there is a good deal of evidence that the information received by those responsible for framing it has not been properly sifted, and that deductions from that information have been arbitrarily made, and have resulted in unforeseen troubles. The medical profession, we think, has been improperly depicted by the lay press as being the only body which regards with apprehension the working of the measure as detailed in the existing proposals. Of course, no one can provide a scheme for medical benefits without medical men. Hence alike the pre-eminent claim of our profession for fair treatment and the fact that our unanimously expressed opinions of resentment at the Bill have attracted such serious consideration. Medical men cannot be dispensed with. But it should be thoroughly impressed upon our readers, and through them upon the public, that medical men are not alone in asking that reasonable time should be accorded for the adjustment of obvious and grave defects. There are many others whose connexion with proposals for sickness and unemployment insurance is very vital, and who will support on strong grounds the growing feeling against any hurry in passing the Bill.

The Chancellor of the Exchequer is still considering the sixfold terms which were formulated by the meeting of Representatives of the British Medical Association on June 1st and which have been endorsed by a large proportion of the Association. The terms are admitted not to embody the whole of the demands of the medical profession, and so far Mr. LLOYD GEORGE has yielded some things that he did not seem prepared to yield at the beginning. In the personal assurances which we were authorised to publish from the Chancellor as long ago as May 20th there will be found a promise, or at least an indication of a promise, to do the two things which it has been publicly announced he will do—namely, to allow adequate representation of the medical profession upon the authoritative bodies created under the Bill, and to make definite provision in the Bill, with a reasonable reservation, for a free choice of doctor. Six weeks ago Mr. LLOYD GEORGE expressed himself as being willing to go thus far, not in so much detail, but certainly by implication; it seems that he has now promised to go farther. In Committee of the whole House on Wednesday an amendment was accepted limiting the class of voluntary contributors to persons whose income does not exceed £160. The Chancellor is also considering the introduction of an amendment securing that persons who can pay fees to medical men, although beneficiaries under the Bill, should continue to pay fees, their benefits being accumulated against future illness.

Section of the Posterior Roots of the Spinal Nerves.

It is only comparatively recently that any surgeon has endeavoured to apply the knowledge gained by the physiologists to the treatment of disease. In the present issue of THE LANCET appear two papers of no small importance on the surgery of the nerve roots. One of the papers is by Professor FÖRSTER of Breslau, one of the pioneers of the

branch of surgery, and the other by Mr. E. W. HEY GROVES of Bristol, who has contributed some important cases.

All the operations have consisted in division of the posterior nerve roots of some of the spinal nerves, and the first question was, What affections would be likely to be benefited by cutting off the sensory impulses from the affected area? The natural answer would be that cases in which there was present intense pain would be most suitable, for it might be thought that if there were pain in a part, and the sensory nerve to that part were divided, the pain would cease completely and at once. In this instance, as in so many others, the result differs considerably from what might have been expected. It is true that some cases have been recorded in which severe peripheral pain has been materially and permanently relieved by section of the posterior nerve roots, but these successful cases form only a small minority of those in which this operation has been performed for pain. In a case in which the interference with sensation was so complete that subsequently it was possible to excise the knee without any anæsthetic, much of the pain in the limb persisted. It is possible that in a certain proportion of these cases the division of the sensory nerve roots has not been complete, but this explanation can apply to only a small number of the failures, and it is likely that the explanation put forward by Mr. HEY GROVES will serve to explain correctly many of the others. In one of his cases, in which he had divided the posterior roots of the fourth and fifth lumbar and the first, second and third sacral nerves, some temporary relief from pain occurred, but later pain returned in a very severe form, and then the patient had recurrent attacks of mania. The pain was better during the maniacal attacks, but it came back as the mental condition improved. In this case, and not unlikely in some of the other unsuccessful cases, it is very probable that the pain was in part at least of psychical origin. It is clear that in such a condition as this the division of the sensory roots cannot do much good. Patients suffering from the characteristic "crises" of locomotor ataxia would not at first sight appear to be suitable for this treatment, but experience has shown that much amelioration is sometimes attainable by section of the posterior roots, and in some few cases the improvement has been so great that the patient has been able to return to his occupation. The suggestion of this method of treatment is due to Professor FÖRSTER, and he performed the first operation in 1908. Up to the present time the operation has been performed in 25 cases. In three of these the operation proved fatal. Of the remaining 22 cases 2 were not benefited, and in 7 there was a relapse, but in 13 cases the result can be considered as satisfactory, though in some of them but little time has elapsed since the operation.

In yet a third form of disease this operation has been employed. In certain cases of spastic paralysis, associated with disease of the pyramidal tract, division of the posterior nerve roots has been employed, and with remarkable success in suitable instances. The explanation that has been given of this beneficial result is this. In the pyramidal tract there are two kinds of fibres—those which carry the motor impulses and those called the inhibitory fibres, which check the sensory stimuli coming by the sensory nerve roots. As a result of the damage of the inhibitory fibres the sensory impulses act unrestrainedly on the nerve centres and a reflex spasm results. If then the afferent impulses be cut off the spasms will disappear. It is, however, essential that the fibres bearing the motor impulses must be intact or at all events not much damaged. It is also clear that the operation cannot be of the least benefit in cases where the spasm is of central origin, as in chorea. The operation has been performed in more than 60 cases, and the results are on the whole very interesting and wonderfully satisfactory, considering the almost hopeless condition of most of the patients. Spasm is in all these cases definitely relieved, and if the pyramidal tract is still fairly undamaged great improvement in motility follows. Mr. HEY GROVES has suggested the injection of a very weak solution of adrenalin just before the operation, and this renders the operation almost bloodless, and thus its duration is markedly shortened.

Only a little more than 20 years have elapsed since the operation of division of the posterior nerve roots was first performed, and it is very much less than this since the number of cases has been at all great, so that any verdict uttered now must at least be tentative, but at least this may be said. The operation in skilled hands has but a small mortality; if the issue in cases where it has been performed for the relief of pain has been very disappointing, in cases of gastric crises results have been achieved which surpass what can be attained by other methods of treatment, and in most cases some improvement follows. It is, however, in certain cases of spastic paralysis that the best results are obtainable, though the cases must be carefully chosen. We shall await with interest the publication of further instances of the performance of this operation, which will enable us to form more exact ideas as to the cases in which it can confidently be recommended. With the improvement of technique the mortality should diminish, though even now it is not very high, and as the operation offers success in cases otherwise hopeless it is deserving of an extended trial.

Medical Administration in Trinidad: The Vindication of Dr. H. L. Clare.

ON two previous occasions we have had to refer to a matter that has greatly—and, as it would now appear, unduly—disturbed the equilibrium of the medico-social atmosphere of Trinidad. In THE LANCET of Sept. 17th, 1910, we chronicled the sitting of a Commission appointed by the Governor of that colony to inquire into certain alleged derelictions of duty, administrative inefficiency, and improper conduct towards his subordinates on the part of Dr. H. L. CLARE, surgeon-general of the colony. In our issue of Feb. 4th, 1911, we briefly reviewed the voluminous report of that Commission, which sat for 27 days, counsel being engaged on either side, and stated that "everything that could possibly be said or written on the matter appears to have been written or said, not once, but many times over." We added: "We are sincerely glad to hear that the chairman of the Commission, although not able to acquit Dr.

CLARE of failings in administrative capacity, finds no proof of any lack of honour or integrity in his character."

This report, with the minutes of evidence and documents, has now been reviewed by the Secretary of State for the Colonies, Mr. HARCOURT, and his decision thereon is expressed in a letter dated June 6th, 1911, and addressed to the Governor of Trinidad, Sir G. R. LE HUNTE, K.C.M.G. The Colonial Secretary, at the outset, expresses the opinion, with which we heartily agree, that it would have been better, in fairness to Dr. CLARE, if an independent medical expert had been appointed as one of the members of the Commission. The need of such an expert Mr. HARCOURT finds demonstrated by the frequency with which the Commission felt itself unable to advise on certain points without professional assistance. Two main facts, the Colonial Secretary says, emerge in the report: 1. That the allegations made against Dr. CLARE in the Legislative Council of Trinidad are not those on which the Commission reported, but that the Commission decided to hear the evidence first, and then to formulate the charges. 2. That Charges II. to VI. inclusive, as formulated by the Commission, and covering those matters relating to the internal administration of the Medical Department of the Colony, substantially broke down on hearing, from which fact Mr. HARCOURT arrives at the conclusion that these allegations must have been made on the slightest foundation and "reflect little credit on those who raised an agitation concerning matters with which they had such an imperfect acquaintance." That leaves only Charges I. and VII. for detailed consideration. With regard to Charge I., the Commissioners consider Dr. CLARE'S procedure as to notification of quarantinable disease based on a mistaken principle. This is a suggestion that the supervising authority should be debarred from waiting for opportunities of making a scientific diagnosis, and we are not surprised to find the Local Government Board in accord with Dr. CLARE'S attitude and procedure. Charge VII. not only raised the question as to professional treatment in a certain case, but also elicited "a distinct suggestion in the several reports of the Commissioners that Dr. CLARE'S conduct to Dr. E. DE VERTEUIL was marked by bad faith." The Secretary for the Colonies, noting that a *primâ facie* case had been made out on these two charges, thought it necessary to obtain expert advice, the more so in view of the general distrust that had arisen concerning the fulfilment of the obligations of Trinidad under the West Indian Sanitary Convention and its present position as the headquarters of the Intercolonial Mail Service. He therefore selected the Local Government Board as the highest authority on quarantine matters, and submitted to them for their opinion the unsettled points in Charges I. and VII., together with all the documents in the case. The correspondence between the Colonial Secretary and the Local Government Board is appended to Mr. HARCOURT'S letter, and makes quite satisfactory reading for those who consider that Dr. CLARE has been very unfairly treated. In the words of the Local Government Board, "it appears from the evidence that in certain instances he [Dr. CLARE] refused to recognise the case as one of plague on clinical evidence alone, and considered bacteriological evidence necessary to justify definite diagnosis. The Board are advised that in so acting, Dr. CLARE followed the customary practice, and would, if he had any doubt as to the true nature of the disease, have acted wrongly in doing otherwise." As regards yellow fever, respecting which bacteriological evidence is not available, Dr. CLARE is held by the Local Government Board to have acted rightly in endeavouring to satisfy himself, by inquiry, as to whether the cases, in which he doubted the correctness of the diagnosis, were or were not in fact cases of the disease. Therefore, Mr. HARCOURT says, the conclusions of the Commissioners on the first charge against Dr. CLARE cannot be upheld. With regard to the seventh charge, that Dr. CLARE tried to coerce his subordinate into changing his opinion as to the real nature of a certain case, and, having failed, accused him of being guilty of the patient's death, a charge which was characterised by one of the Commissioners, Lieutenant-Colonel SWAIN, as "absolutely false and unfounded," this charge was withdrawn. It was found that Dr. CLARE acted improperly in failing to forward to the Governor of Trinidad Dr. SEHEULT'S covering letter, in circumstances which are fully set out in the report of the Commission. After devoting much attention to the point the Colonial Secretary concludes that here Dr. CLARE committed an error of judgment, but that there was no intention on his part to deceive.

The Colonial Secretary thus sums up: "As the Commissioners' report is favourable to Dr. CLARE in regard to Charges II. to VI., as the Local Government Board have upheld his procedure in the matters which fell under Charge I., and as Charge VII. results only in a decision that his judgment has been at fault, it would seem natural to conclude that there was insufficient justification for so laborious an investigation. So far as Dr. CLARE is personally concerned I must say unhesitatingly that this is the case. He will be able to return to the colony with the assurance that, after the most searching inquiry, nothing has been proved against his personal honour, or against his ability in his profession. This, however, will hardly make up for the heavy strain which the inquiry will have entailed upon him, and in the circumstances I consider that Dr. CLARE is fully entitled to be indemnified for the expenses which he was forced to incur through the appointment of the Commission and the procedure adopted." Mr. HARCOURT expresses the hope, from a wider point of view, that the inquiry will dissipate the mistrust for some time existent in neighbouring communities as to the inadequacy of the practice of the Trinidad administration in ascertaining and notifying cases of infectious disease. Dr. CLARE, therefore, is free to return to his post with his honour vindicated and his personal expenses, to some extent at least, indemnified, but neither can fully compensate him for the mental strain that must have been thrown upon him by this bitter attack. And bitter is the only word to describe it. After perusing again the closing vituperation of the Hon. L. A. WHARTON, who appears to have regarded himself as conducting a prosecution, we see that no such language should have been tolerated in a Commission of Inquiry. As we said previously in this regard, the dispassionate form of investigation, or commission, to which we are accustomed at home, in which the object is simply to get

at the facts of the case, not to secure a forensic victory for one side or another, is much to be preferred. We trust, however, that the complete vindication of Dr. CLARE will result in a general amnesty between the parties recently in conflict.

Annotations.

"Ne quid nimis."

THE NOMENCLATURE OF MALTA FEVER.

WE learn that the Governor of Malta has made representations to the Secretary of State for the Colonies with regard to the use of the term "Malta fever." The Governor points out that the disease in question, which is called "Mediterranean fever" by some authorities and "undulant fever," or "undulating fever," by others, so far from being peculiar to Malta, occurs all over the Mediterranean littoral, being found in Egypt, Cyprus, Greece, Crete, Sicily, Italy, France, Spain, Algeria, Tunis, and Tripoli, as well as in other countries such as India and South and Central Africa, which do not border on the Mediterranean sea. He urges that the name "Malta fever" is inappropriate and likely to operate to the disadvantage of the island by conveying the impression that Malta is the only place where the fever prevails. The Governor's views have been brought by the Secretary of State to the notice of the London and Liverpool Schools of Tropical Medicine and the Academy of Medicine in France, as well as the War Office and the Admiralty, with the result that all these institutions have agreed to abandon the use of the term "Malta fever." This commendable action raises once again the old question of the want of uniformity in the nomenclature of diseases. The Royal College of Physicians of London grappled more or less successfully with this problem some years ago, and their nomenclature was adopted by the Registrar-General upon death certificates; but medical writers and speakers have never really paid much serious attention to these rulings, and many old muddles remain. The task of reform seems almost too hard. Even if a definite uniform plan based on pathology, as in poliomyelitis, or on some leading characteristic, as in infantile palsy, were adopted by all the teaching and examining bodies, and insisted upon to the utmost of their powers, there are many diseases whose old and perhaps stupid names would die very hard. As a matter of fact, Malta or Mediterranean fever stands almost alone in the list of diseases named after places. Texas fever, Delhi boil, and Guinea worm seem to be its main congeners. Roman fever as a term for malaria is not used in medicine, and rickets is not known in this country as "the English disease." We sympathise with the inhabitants of the island of Malta in their protest.

THE SALE OF SECRET REMEDIES.

THE Home Secretary's promise, or rather half-promise, to appoint a Select Committee to consider the conditions of the sale of "patent medicines"[1] will be welcomed by the medical profession and, in all likelihood, by the vast majority of pharmacists. For a long period the methods employed by some manufacturers of secret remedies have been a scandal, and an official inquiry into these methods and into the composition of the medicines cannot but lead to good results. Mr. Churchill's statement will not have taken the manufacturers unawares. They were, in fact, prepared to expect an inquiry at an earlier date, for Lord Gladstone, who preceded Mr. Churchill as Home Secretary, intimated that he considered the appointment of a committee for this purpose desirable. So large are the interests threatened that the proprietors of secret remedies are sure to fight strenuously in their own defence, and it therefore behoves those whose desire it is to check the sale of harmful nostrums to be prepared with an irresistible attack. During the year ending March 31st, 1910, the latest period for which the figures are available, the revenue from medicine stamp duty was £313,114, and during the ten years ending at the same date the revenue derived from this source reached a total of over £3,000,000 sterling, which means that during the decennial period the British public spent between £20,000,000 and £25,000,000 on medicines subject to duty. These figures afford some idea of the vastness of the interests affected by the proposed inquiry. Apart from the individual influence which some manufacturers will be able to exert, it is important to note that, as a class, they are well organised. It is interesting to observe that in the United States of America, where the public is afforded some degree of protection against fraudulent and harmful nostrums, it is intended to strengthen the law relating to the sale of these articles. In a recent special message to Congress President Taft referred to the failure of the Pure Food and Drugs Act to give anything like adequate protection to the public, and strongly recommended Congress to pass a measure of legislation the effect of which would be to overrule recent decisions of the courts by which the intentions of the Act have been frustrated.

[1] THE LANCET, July 1st, 1911, p. 62.

BIOT'S BREATHING.

IN 1876 Camille Biot published an article on Cheyne-Stokes respiration in the *Lyon Médical* showing pneumatographic tracings taken from a boy aged 16 years and suffering from tuberculous meningitis. These differed from Cheyne-Stokes respiration in that, instead of the respirations gradually diminishing and increasing before and after the pause, they became deep and dyspnœic and corresponded to a deep sigh. Two years later, in a further study of the subject, he quoted from a number of authorities, including Trousseau, to show that the characteristic respiration of meningitis, especially of the tuberculous form, is of this type. However, this form of dyspnœa has received little attention from subsequent writers. In the *American Journal of Medical Sciences* for March Professor Lewis A. Conner has published an important paper on Biot's breathing. During the past two years he has made graphic study of pathological types of breathing and encountered seven typical cases of Biot's type of breathing. In six cases the patient was suffering from meningitis. He has found that its characteristics are as follows: 1. Periods of apnœa which vary in length and occur at irregular intervals. 2. Constant irregularity in the rhythm and depth of individual respirations. 3. The frequent occurrence of deep sighs. 4. In spite of the variation of the depth of inspiration the position of the chest at the end of expiration, remained constant. This seemed to be due to the fact that the expiratory act was purely passive, the active muscular expiration, frequently present in various forms of dyspnœa, being absent. In contrast to this the breathing in a case of fatal anuria showed great irregularity in the level of expiration, the ascending (expiratory) limb of the tracing being carried above the mean expiratory level in consequence of active muscular efforts during expiration. Otherwise the breathing corresponded to Biot's type. In six out of the seven cases of Biot's breathing the disease was meningitis, and in the seventh some intracranial complication of suppurative mastoiditis, possibly meningitis. In 24 other cases of meningitis Biot's breathing was never detected. It was thus observed in 20 per cent. of the cases of meningitis. The scanty literature of the

subject shows that Biot's breathing is supposed to occur not only in meningitis, but in other cerebral conditions. It is therefore sometimes described as "cerebral breathing." In three of the present cases the patients were infants under the age of 2 years; in two they were children of the age of 3 years; and in two they were adults. Of the six proved cases of meningitis four were tuberculous, one was due to the streptococcus pyogenes, and one to the diplococcus intracellularis. In a great variety of other diseases studied, including a number of cerebral ones, such as hæmorrhage, thrombosis, syphilis, and various forms of coma, no case of Biot's breathing was found. In four of the cases in which Biot's breathing was present it was observed a few days after the onset of the symptoms. It may therefore be an early and important sign of meningitis. Its occurrence seems to bear no special relation to the state of the pulse (whether rapid, slow, or irregular), or indeed to the presence or absence of any other symptom. It was observed in cases of slight drowsiness as well as of deep coma. Biot's breathing may be further contrasted with Cheyne-Stokes breathing. The dominant feature of the latter is the rhythmic succession of periods of dyspnœa and apnœa. The periods of apnœa are uniform in length and occur at regular intervals. The periods of dyspnœa are composed of the same number of respirations, which regularly wax and wane. The characteristic feature of Biot's breathing, on the other hand, is the absence of any sort of rhythm. The periods of apnœa vary in length and occur at irregular intervals, and there is constant irregularity in both rate and depth of the respirations. Such differences seem to point to a different pathogenesis of the two conditions. In a comprehensive study of Cheyne-Stokes respiration Dr. G. A. Gibson of Edinburgh, accepting the conclusions of Marckwald that periodic breathing can occur only when some of the higher brain centres have ceased to exert their influence on the automatic centre of the medulla, has suggested that Cheyne-Stokes breathing may require the total abolition of such influence, and that the meningitic or cerebral type of breathing may result from the irregular discharge of unequal impulses from the higher centres.

HEALTH ADMINISTRATION IN SOUTH AFRICA.

WE learn that two very well-known and efficient medical officers of health in South Africa have lately been informed by the authorities that they are about to be "retrenched"—in other words, that their services will no longer be needed in the important posts which they now hold. Dr. A. J. Gregory is medical officer of health of Cape Colony and Dr. Pratt Yule is medical officer of health of the Free State, and each is to be "retrenched" as from the end of August. In this connexion it is important to recall that the Public Health Amendment Bill, introduced during the first session of the Union Parliament of South Africa, provided for the establishment of a Chief Union Medical Officer, together with such assistant medical officers as might be necessary. This Bill was not passed, but it is believed that the South African Government has not dropped the idea of creating the post of principal medical officer of health for the Union, although it does not see its way to appoint a Minister of Public Health with a separate department, as was urged upon it by various medical authorities. It seems probable that a chief and an assistant medical officer of health for the Union will soon be appointed, and it was generally anticipated in public health circles that Dr. Gregory and Dr. Pratt Yule respectively would be selected for these two important positions, since their claims are exceptionally strong. There seems to be a firm conviction that no medical officer in South Africa is so well fitted by experience and ability for the chief officership as Dr. Gregory. In these circumstances the news of Dr. Gregory's approaching retirement from his present post on a pension has come as a shock to a large number of medical men and other authorities interested in the national health of the Union, who fear that the Government intends to overlook his undoubted claims. Dr. Gregory's record of past services, contained in the Cape Civil Service List, suggests that it would be a public misfortune for him to be lost to the public health service of that country at the most critical stage in its history.

GOVERNMENTS AND ECONOMIC MEDICINE.

THE banquet and reception given to President Taft by the Medical Club of Philadelphia,[1] at which more than 1000 medical men were present, has a significance reaching far beyond the United States of America. The function and the speeches of which it was the occasion emphasise the increasing recognition, not merely *pro formâ*, but with actual appreciation due to intimate personal knowledge, by the governing powers of the economic and social significance of public hygiene and preventive medicine. The speech of Mr. Taft particularly was replete with an intimate knowledge made possible only by his close association with the medical profession in his public capacities as former Governor-General of the Philippines, Governor of Cuba and Secretary of War, and his personal observation of the effects of sanitation in Porto Rico and in the Canal zone of the Isthmus of Panama. He spoke of the fact that the cleaning up of Havana, while useful in the prevention of other diseases, had little or no effect in preventing yellow fever until Major Walter Reed and his colleagues demonstrated the connexion between that disease and the stegomyia, which fact was promptly applied by Colonel Gorgas, of the Army Medical Corps, with the result that the disease has been practically banished from Havana. In like manner uncinariasis, or tropical anæmia, is in a fair way of banishment from Porto Rico; while in the Philippines cholera has been greatly reduced, small-pox (which had previously flourished there in virulent type) has been practically stamped out, bubonic plague has had its terrors removed, the injurious effects of malaria have been moderated, and even amœbic dysentery is being brought under control. Removal of lepers to the island of Culion has reduced the new cases of leprosy in the Philippines to 16 per cent. of what they were formerly, and beri-beri has been practically stamped out of those islands. Moreover, the study of the dejecta of the native Filipinos has shown that the intestinal flora has been largely responsible for the enfeebled condition of that race, which by proper treatment founded on this knowledge may be greatly strengthened. As to the Canal zone of the Isthmus of Panama, what was formerly a pest-ridden zone has been converted into a pleasant and healthful place to live in. "Colonel Gorgas," said President Taft, "stamped out yellow fever, so that for now more than four years there has not been a case on the Isthmus, and he reduced the malignancy and extent of malaria on the Isthmus to such a point that the percentage of deaths in the foreign population of the zone is considerably less than in our large cities." Another evidence of the vast improvement in sanitation cited by President Taft is the fact that the United States now has a division of 18,000 soldiers in Texas and California living under canvas for two months, "in a country soaked with rain and deep with profanity-provoking mud"; yet the percentage of sick men is less than it was in the posts from which these men were mobilised. During the Spanish-American war, of the volunteer regiments mobilised

[1] President Taft and the Medical Profession, American Medical Association, 1911.

90 per cent. became infected with typhoid fever within eight weeks from the date of mobilisation, yet to-day, in the same period after mobilisation, but with modern health regulations and antityphoid vaccination, only one case of typhoid fever has appeared, and that in the case of a teamster who was not vaccinated. A large part of the research work, though not all, as a result of which these splendid results have been attained, has been done by army medical officers, and President Taft concluded by congratulating the medical profession at large that "they have had the opportunity, and have seized it, to make such progress in relieving the suffering of the human race and in becoming in so conspicuous a way the benefactors of mankind." In these days a movement of real progress rapidly spreads from one nation to another, and if the example set by the Medical Club of Philadelphia in bringing into close touch the administrative authorities of the country with the economic work of its medical profession, military, naval, and civil, should so spread, it will have deserved the thanks of all peoples as well as of the medical profession.

NURSES AND THE WORKMEN'S COMPENSATION ACT.

A MEDICAL man has recently inquired whether a patient employing a private nurse (not attached to any institution and therefore not already insured by an employer) is liable to compensate her if she meets with an accident in the course of her service with him. The question was evidently intended to refer to the ordinary circumstances of nursing a case of temporary illness, where the nurse remains for a short time, perhaps for a few days only, in the patient's employment; and our correspondent also alluded to the obvious inconvenience to the patient of effecting insurance under such conditions, suggesting that the difficulty might be met by the nurse insuring herself "as if she were her own employer." We may point out here that the question of insurance is not one with which the Workmen's Compensation Act, 1906, concerns itself. It provides that employers shall pay compensation upon a prescribed scale to persons employed by them, in the event of such persons meeting with accidents and claiming such compensation, but the employers are left to decide for themselves whether they shall protect themselves against loss by insurance or not. There can be little doubt that a nurse attending a case in a private family in the ordinary circumstances inquired about by our correspondent comes within the definition of "a person who has entered into or works under a contract of service or apprenticeship with an employer, whether by way of manual labour, clerical work, or otherwise," and that such exceptions as are provided for do not in ordinary cases, at any rate, apply to nurses. Equally there can be no question that a nurse's calling exposes her to a risk of accident rather more than is the case with many employed persons. Her risk, at any rate, is greater than that of most domestic servants. These latter are, as a rule, insured by their employers, but probably the insurance of the nurse, who in the sudden emergency of illness becomes one of the employed, is rarely thought of. The suggestion that she should insure herself does not, strictly speaking, meet the difficulty. There is nothing to prevent a nurse from insuring herself against accident, illness, or anything else, and the nature of her occupation makes it obvious that this is an exceedingly prudent and proper thing for her to do. It would not, however, protect her employer if she were to do so, even though she were to tell him that she was insured on entering his house and to undertake to bring no claim for compensation against him, because the Act provides that there shall be no "contracting out" of its provisions. Of course, a nurse who undertook to bring no claim and then took legal proceedings to obtain compensation for accidental injury would be acting dishonourably, but that is another matter, and the opportunity for doing so would rarely arise, as the employer who was prudent enough to take into consideration the question of possible accidents when engaging a nurse would hardly be so foolish as to be a party to a contract which everyone knows to be legally void. To refer again to the question of our correspondent, which he confines to the case of a nurse "not attached to an institution," we do not limit our view of the patient's liability to nurses who, so to speak, earn their living as "free-lances." Nurses may sometimes go out to attend cases under such conditions that the institution employing them is, and remains, liable to compensate them for accidents. There must, however, be a large proportion of instances in which the nurse may acknowledge the authority of an institution which to some extent controls her conduct and is responsible for her welfare, but in which she is in fact temporarily in the service of a patient who, while engaging her through the institution, becomes her employer quite sufficiently to give her the right to claim against him. In the circumstances we venture the opinion that a thoroughly prudent patient would insure his nurse and that an obliging medical adviser might earn his gratitude by recommending him to do so. We are not aware of any special policies issued for such occasions by insurance companies, but they may exist, and in any case could easily be devised to meet exigencies which so frequently arise. The amount that they would add to the ordinary expenses of medical and nursing attendance in illness would be comparatively small, and they would provide against contingencies which when they occur may be of a serious character.

THE NECROPSY OF NAPOLEON I.

SEVERAL of our correspondents have alluded recently to the pathological conditions which may or may not have largely influenced some of the dramatic events of the career of that superlatively great man, Napoleon. Some, if little, light is thrown on the subject of Napoleon's health by the description of his necropsy in the well-known work of Dr. Arnott, "An Account of the Last Illness, Decease, and Post-mortem Appearances of Napoleon Bonaparte, to which is added a letter to Lieutenant-General Sir Hudson Lowe, K.C.B., etc., giving a Succinct Statement of Napoleon Bonaparte's Disease and Demise" (published by John Murray in 1822). Archibald Arnott, who was an M.D., states in the preface to his little book, that "*no* other English medical person saw him in his death-bed sickness." The ex-Emperor, indeed, would only receive the professional visits of Professor Antomarchi and of Arnott, and he went so far, we are told by the latter, as to extract a promise from his "family," or *entourage*, that if at any time he became insensible no other medical man should be called in. Arnott confesses that his notes had always been written in haste, "not with the most distant view of their ever meeting the eye of the public." Nevertheless, these hasty private notes, which, reprinted, only fill two columns in a small gazette,[1] are now a chief authority on the post-mortem appearances of one of the greatest figures of the last century. We reprint the "Report of Appearances on the Dissection of the Body of Napoleon Bonaparte" and leave our readers to draw what conclusions they may therefrom. "On a superficial view the body appeared very fat, which state was confirmed by the first incision down its centre, where the fat was upwards of one inch thick over the sternum, and one inch and a half over the abdomen. On cutting through the cartilages of the ribs, and exposing the

[1] Reprinted in John Bull, Oct. 13th, 1822.

cavity of the thorax, a trifling adhesion of the left pleura to the pleura costalis was found; about three ounces of reddish fluid were contained in the left cavity and nearly eight ounces in the right. The lungs were quite sound. The pericardium was natural, and contained about an ounce of fluid. The heart was of the natural size, but thickly covered with fat; the auricles and ventricles exhibited nothing extraordinary, except that the muscular parts appeared rather paler than natural. Upon opening the abdomen the omentum was found remarkably fat; and on opening the stomach that viscus was found the seat of extensive disease; strong adhesions connected the whole superior surface, particularly about the pyloric extremity, to the concave surface of the left lobe of the liver, and on separating these an ulcer, which penetrated the coats of the stomach, was discovered one inch from the pylorus, sufficient to allow the passage of the little finger. The internal surface of the stomach, to nearly its whole extent, was a mass of cancerous disease, or scirrhous portions, advancing to cancer; this was particularly noticed near the pylorus. The cardiac extremity, for a small space near the termination of the œsophagus, was the only part appearing in a healthy state. The stomach was found nearly filled with a large quantity of fluid, resembling coffee grounds. The convex surface of the left lobe of the liver adhered to the diaphragm, but with the exception of the adhesions occasioned by the disease in the stomach no unhealthy appearance presented itself in the liver. The remainder of the abdominal viscera were in a healthy state. A slight peculiarity in the formation of the left kidney was observed." Commenting on this report, of which Arnott was one of the signatories, he expresses surprise "that a person of Napoleon Bonaparte's habits should have been affected with schirrus and cancer of the stomach;—a man who was noted for temperance, and never in his life indulged in any excess which could tend to produce such an affection." "It is somewhat remarkable," however, "that he [the Emperor] often said that his father died of scirrhus of the pylorus." His son, of course, died from phthisis at an early age. It is to be noted that no examination of Napoleon's brain is recorded by Arnott.

THE SARDINE.

DIETETIC authorities may well praise the sardine, since, for one thing, it encourages the ingestion of oil, which for a reason difficult to find is very commonly excluded from the diet nowadays. A bland fat affords such an excellent physiological balance to nitrogenous foods that its reasonable use will help us to avoid many ills, and especially those associated with wasting diseases and gouty dispositions. It prevents the overloading of the tissues with nitrogenous waste products and a digestible fat favours nutrition considerably. The sardine supplies also an excellent proportion (25 per cent.) of nitrogenous material, and so it becomes a real and economical food. In addition to this the sardine has appetising qualities, and where appetite serves digestion follows. Luckily, its preservation in the cooked state in oil precludes contamination, even although it is brought to our shores in the tin. We have examined a great number of samples of tinned sardines, but not once have we been able to find the slightest evidence of metallic contamination or of objectionable preservatives. The tins consist of no worse metals than iron and tin, both of which may be regarded as practically outside the pale of poisonous metals. Oil is, besides, an effective guard against these metals being attacked. Physiologically it counts for very little if the sardine proves to be not a "scientific" sardine and the oil is not the oil of the olive. We have a suspicion that a preference would be exhibited for the genuine sardines and *l'huile d'olive*, but the fishes substituted for the real Sardinia pilchards are, generally speaking, still of the herring family, and the cheaper oil used is wholesome, consisting often of pea-nut oil or sesame or cotton-seed oil, which contain to a large extent the same fatty principles as olive oil. This view must not be regarded for a moment as favouring the practice of substitution in general, while obviously in this case the consumer is not injured nor is he seriously cheated. Neither what we know to be a herring or sprat is a true sardine, and cotton-seed oil is certainly not *l'huile d'olive*. Strict ethical teaching, however, would require some declaration as to the exact nature of the goods. But if that demand were enforced there would soon arise an unnecessary prejudice against the substitutes, which after all are very closely related to the genuine articles, and which are equally palatable and nutritious. If the real sardine were as abundant as its congeners the position might be different. As it is we may be grateful for a plentiful and cheap supply of this appetising morsel, whether sardine, sprat, or herring.

ACUTE ANTERIOR POLIOMYELITIS IN THE DISTRICT OF COLUMBIA.

THE occurrence of an epidemic of infantile paralysis in the District of Columbia during the summer of 1910 led to the appointment of a committee by the President of the Medical Association of the District of Columbia to investigate the incidence and general characters of the disease. This committee has recently issued an interesting report (reprinted from *Washington Medical Annals*, Vol. X., No. 2, May, 1911) of which we have received a copy. Information was received in regard to 506 cases, which are believed to include approximately all those occurring in the District during 1910. Among these there were 16 deaths. Reports were obtained of 246 cases, but in only 150 of these was the date of onset noted. The outbreak began in June and reached its maximum in July and August. There was nothing extraordinary about the temperature during the epidemic, but the rainfall was much less than normal, the summer being an exceptionally dry one. In regard to age, the youngest patient was 4 months old, the oldest 64 years. Of the 246 cases, of which records were obtainable, 217 or 88 per cent. were under 10 years of age. In six instances there occurred two cases in the same family. Seventeen cases gave histories of exposure to acute cases of poliomyelitis, and one gave a history of exposure to a recovered case. In one locality prior to the appearance of anterior poliomyelitis in human beings there occurred an outbreak of a disease associated with paralytic symptoms among ducks and chickens, and a man who performed post-mortem examinations on two ducks with this disease shortly afterwards developed poliomyelitis. Careful laboratory investigations, however, failed to show any relation between the two conditions. The report includes a note of the pathological examination of a fatal case by Dr. Gonzalo R. Lafora. He found slight dilatation of the vessels and thickening of the pia mater. The grey matter appeared reddish with small hæmorrhages. Histologically, infiltration of the vessels with lymphocytes and plasma cells, and the disappearance of ganglion cells in certain parts of the cord, or their degeneration in the anterior horns, as described by previous observers, were confirmed in this case by Dr. Lafora. The occurrence of a large number of "Körnchen" (granular) cells filling the grey matter and surrounding the few remaining ganglion cells was also a striking feature. Plasma cells were also found outside the adventitial spaces of the vessels, and many of them showed karyokinetic processes or possessed two or more nuclei. Most of the macrophages, which sometimes filled the entire anterior horn, were of the mononuclear variety. Certain rod-like cells (Stäbchenzellen) of neuroglial origin were

found, but mast cells, though seen, were very few. Some very small diplococci were seen among the cells infiltrating the grey matter, and also certain formations, without nuclei, which morphologically reminded Dr. Lafora of the encapsulated Leishman-Donovan bodies in kala-azar. Hypertrophic processes occurred in the nucleoli of the ganglion cells. In many of these cells very marked neuronophagy was observed, and in others the Altmann granules were greatly increased in number. The results of the examination of the cerebro-spinal fluid in 11 cases are recorded by Dr. William H. Hough and Dr. Lafora. They examined the fluid chemically and studied the cells by many different methods of staining, since they found that important details were brought out by one method which were not shown by others. They found that the cerebro-spinal fluid was generally clear, that in the early stages of the disease there was usually an increase of pressure, though this was not as a rule pronounced, and that there was an increase in the protein content sufficient to give a positive Nonne-Alpelt and Noguchi butyric-acid reaction. In the earlier stages of the disease there was an increase in the leucocytes, especially the polymorphonuclears. These cells diminished after a few days, and a lymphocytosis with some plasma cells and sometimes a few mast cells replaced the polymorphonuclear increase. The disappearance of the polymorphonuclears was brought about through the phagocytic activity of the macrophages. Körnchen cells, altered lymphocytes, and other mononuclear elements were commonly present in the fluid until after the febrile period. Dr. Hough and Dr. Lafora suggest that the similarity of these characters to those of the fluid in some protozoan diseases is an argument in favour of the protozoan nature of the virus, even though other observers claim that the disease is produced by a much smaller organism. This report affords some interesting information concerning some of the features of this serious disease, and is a useful contribution to the study of its special characters in the epidemic form.

SUPRAPUBIC PROSTATECTOMY IN A PATIENT WITH AN OLD SUPRAPUBIC FISTULA.

IN the *Annales des Maladies des Organes Génito-Urinaires* for May a case of much interest is described by Dr. M. Patel and Dr. G. Cotte of Lyons. The patient was a man, 67 years old, and nine years previously a suprapubic cystostomy had been performed for retention caused by prostatic hypertrophy. The immediate results of that operation had been very good, and when the opening had contracted a little micturition had become very regular. The patient passed urine about every four hours, and he did not suffer from either retention or incontinence. No urine was voided by the urethra. Slowly a ventral hernia had developed immediately above the urinary fistula, and at last it had grown to such a size as to interfere seriously with his work, and he asked to be relieved of the hernia. On examination by the rectum a very large prostate was felt, but a catheter could not be introduced by the urethra. A large ventral hernia above and in front of the pubis was present, and the urinary fistula opened about the middle of the swelling, but, so far as could be ascertained, the bladder formed no part of the hernia. As the hernia interfered so greatly with the patient's work, and as the fistula prevented the use of a truss, it was resolved to operate. It appeared to be essential to a satisfactory result that the urinary fistula should be closed, and that urethral micturition should be re-established. It was found to be impossible to reach the bladder without opening the peritoneum; therefore, a large skin incision having been made, the hernial sac was removed and the peritoneum was sutured. With very great difficulty the fistula, which measured 10 to 12 centimetres in length, was followed down to the bladder, which was contracted and lay deep in the pelvis. The bladder was incised, and the prostate was shelled out. A fortnight later urine began to pass by the urethra, and six weeks later the suprapubic fistula was completely closed. Except for slight contraction at the site of the prostatic urethra, which yielded to dilatation, the result was perfect. A little hernial protrusion still existed at the upper part of the scar, but as the fistula was closed a belt could be worn. The great functional value of the suprapubic fistula in this case was probably due to its length and obliquity, and the successful result of the final operation was in great measure due to the fact that no urinary sepsis was present.

LEGISLATION WITH REGARD TO ANÆSTHETICS.

THE question of legislation in regard to anæsthetics has now been prominent for four years. It has been the subject of a Home Office Departmental Committee inquiry and has been thoroughly discussed by (1) the General Medical Council; (2) the Royal College of Surgeons of England; (3) the British Medical Association; (4) the British Dental Association; (5) the Medico-Legal Society; (6) the British Association for the Advancement of Science; and (7) the Anæsthetics Section of the Royal Society of Medicine. All these bodies have reported in favour of legislation, and a draft Bill to protect the public has received the support of the General Medical Council, and is now at the Home Office. We trust that we may be able to report immediately some action upon all this preparation. Not only the medical profession, but a considerable section of the public, have been expecting the Home Secretary to introduce legislation on the lines suggested in the Bill, and the disappointment that this has not been done has been very real. As pointed out in a recent article in our columns, further necessary reforms in anæsthetics are blocked by reason of this delay in legislation. Is it not possible that the Home Office should make an effort to introduce a Bill this session? We are not without knowledge of the stress of affairs at this moment, but the action would be very welcome. If this is impossible, we hope that the beginning of the next session we may see the measure brought forward. Being a question which has been threshed out in so thorough a manner that upon all its essentials there is, practically speaking, unanimity, it is difficult to see why there should be further delay in providing the public with the protection desired.

NEW VIEWS AS TO THE BACTERIOLOGY AND TREATMENT OF LEPROSY.

IN a supplement published with the *Indian Medical Gazette* for May is an interesting article by Captain T. S. Beauchamp Williams, I.M.S., the results of whose researches, if they are confirmed, will modify our view of leprosy. From cases of leprosy he has grown four different types of organisms which he believes are merely four phases of a pleomorphic streptothrix. The first of these phases described in Captain Williams's paper was a Gram-positive streptothrix, not retaining carbol-fuchsin under treatment with acid. It was grown directly from several patients, both in Persia and in Bombay, and also by sub-culture of the second type of organism, a diphtheroid bacillus, which, like the streptothrix, is not acid-fast. Captain Williams believes that the bacillary form is really the result of very rapid division of the streptothrix, favoured by certain cultural conditions. Both of these forms are convertible by suitable methods of sub-culture into acid-fast micro-organisms in which a streptothrix form and a bacillary form can be observed. One interesting method which was employed was the symbiotic culture of the diphtheroid bacillus with pure

growths of amœbæ; the amœbæ ingested the bacilli and thereby rendered them acid-fast. It seems, further, that the acid-fast streptothrix form can be converted into a non-acid-fast bacillus by change in the cultural environment. Captain Williams therefore claims that these four types, the acid-fast and the non-acid-fast bacillus and the acid-fast and the non-acid-fast streptothrix, may be regarded as four different phases of the same micro-organism. His animal experiments, which are not described in detail, afford reason for the belief that inoculation of the acid-fast forms into guinea-pigs can produce nodular lesions at the site of injection as well as in the lymph glands and omentum. The most interesting section of Captain Williams's paper is that which described the results of inoculating leprous patients with a vaccine prepared from both cultures of the acid-fast streptothrix. Without exception the injection was followed by very distinct local and systemic reaction, which was entirely absent after similar inoculations of healthy persons. In some cases, indeed, the local reaction was so pronounced as to be alarming. Treatment of 15 cases was instituted, and the results are so far encouraging that Captain Williams considers it capable of immunising patients against a further spread of the disease, and hopes that it may be possible to effect a cure in early cases by this means. The article is well illustrated by coloured drawings of the various forms of micro-organisms, and the writer has made it clear throughout that his results are not in conflict with those of other recent investigators.

TREATMENT OF SCARLET FEVER AND DIPHTHERIA AT LEICESTER.

THE annual report of the medical officer of health of Leicester (Dr. C. Killick Millard) contains the statement that during the year experiments were made with eucalyptus oil as recommended by Dr. Robert Milne. The details of the treatment as prescribed by Dr. Milne were faithfully adhered to in every particular and no change was made until 100 patients had passed under the treatment. The conclusions Dr. Millard arrives at are that the period of infectivity was not shortened to anything like the extent claimed by Dr. Milne; indeed, he is not yet satisfied that it has any very appreciable effect in this respect. Nor could he satisfy himself that complications and sequelæ were appreciably diminished, and there was some reason to believe, he thinks, that the number of albuminuria cases were increased. In regard to diphtheria, Dr. Millard says that Leicester has taken a decided stand in the treatment of this disease in hospital entirely without alcohol. It used to be taught that in this disease, owing to the tendency to heart failure, the use of alcohol in large doses was frequently imperative, and that it was orthodox practice to use it. The discovery, however, that the heart failure in diphtheria was due to nerve degeneration, caused by the diphtheria toxin, rendered it improbable that alcohol would be of any real benefit, while the researches of Sims Woodhead, which showed that in horses alcohol definitely interfered with the acquirement of immunity, which is Nature's method of effecting a cure in the case of all zymotic diseases, made it reasonable to regard alcohol as actually contra-indicated. Added to this there is the undoubted fact that alcohol is a drug in which there is a serious danger of a drug habit being established. For these reasons the use of alcohol in the treatment of diphtheria has been entirely discontinued in the Leicester isolation hospital, and was not employed during 1910. Although scarcely more than half the cases of diphtheria notified in the district were removed to hospital this proportion included most of the serious cases, especially those requiring operation. Antitoxin was used in practically all cases. There were 114 cases of diphtheria in Leicester during the year and 11 deaths, and while not suggesting that Leicester's pre-eminently satisfactory position as regards diphtheria mortality is the result of the fact that alcohol was not used, Dr. Millard says it is certainly satisfactory to find that having boldly departed from the orthodox line of treatment the deaths from diphtheria are so few in number. The ordinary death-rate for Leicester is 12·4, and the zymotic death-rate 0·69, both being the lowest on record.

EXTRAPERITONEAL COMPRESSION OF THE COMMON ILIAC ARTERY FOR THE PREVENTION OF HÆMORRHAGE IN DISARTICULATION OF THE HIP.

ONE of the main causes of the heavy mortality after amputation at the hip-joint has always been the great loss of blood which is liable to occur in this operation, and many methods have been devised from time to time to prevent this serious hæmorrhage. One of the most striking of these methods was that brought forward by McBurney in 1894. This consists in digital compression of the common iliac vessels through a small incision made through the abdominal wall. Dr. R. Martin Gil of Malaga has devised a modification of this, which he considers to be an improvement on the original method. He considers that it is undesirable to run the risk of peritonitis through opening the abdominal cavity, and therefore he advocates an extraperitoneal compression of the common iliac vessels. A curved incision is made from 6 to 8 cm. in length, with its concavity forwards passing from a point 2 or 3 cm. from the middle of the iliac crest to the tip of the last rib. When the muscles have been divided the peritoneum is stripped up and it is possible to feel the common iliac artery, and it may be readily compressed. The method deserves a trial, but it does not appear to us that it is materially less dangerous than the original McBurney method.

ONSET OF TYPHOID FEVER BY MENINGEAL SYMPTOMS.

AT a recent meeting of the Société Médicale des Hôpitaux of Paris Professor F. J. Collet and Dr. C. Lesieur of Lyons reported a case of a very rare form of typhoid fever in which the onset was sudden by meningeal symptoms, suggesting cerebro-spinal meningitis. A nurse, aged 29 years, was admitted into hospital on Sept. 30th, 1910. She suddenly became ill on Sept. 27th, with pains in the head, neck, spine, and abdomen, rigidity of the neck, and loss of strength, so that she could not work. She was constipated; the bowels did not act from Sept. 25th to 30th. For three days before admission she had no appetite, could not take any food, and had several attacks of bilious vomiting. On the 29th the evening temperature was 103·2° F. On admission she complained only of pains in the head so severe as to prevent her from sleeping. The face was a little grimacing, especially when she spoke, and the eyes were slightly congested. Movements of the head were impeded by rigidity of the neck, and pressure on the spines of the cervical and dorsal vertebræ was a little painful. The spleen was not felt. The pulse was 100 and good, and the temperature in the morning was 103·1° and in the evening 103·4°. Vomiting occurred again. On drawing the finger over the abdomen marked dermographia, lasting several minutes, was produced. On Oct. 3rd there was incontinence of urine, and vomiting occurred without nausea; the pulse was 120, and the evening temperature 104·2°. Kernig's sign was present in slight degree. Lumbar puncture yielded fluid of normal appearance which on centrifugalisation showed only a few mononuclear leucocytes. On Oct. 4th the pain in the head was much

less and there was no longer any stiffness of the neck. On Oct. 5th there were slight meteorism and two or three rose spots on the abdominal wall, gurgling was produced by pressure on the right iliac region, and the spleen was palpable. The Widal and diazo reactions were positive. On the 6th the meningeal symptoms had entirely disappeared. After this the disease ran the ordinary course of typhoid fever and the patient was discharged cured on Nov. 21st. Thus during the first week the symptoms were markedly those of cerebro-spinal meningitis, but the want of correspondence between the pulse and temperature should have raised suspicion of the true nature of the affection. The negative result of lumbar puncture with the other symptoms established the diagnosis.

Professor Paul Uhlenhuth, M.D., director of bacteriology in the Imperial Health Institute, Berlin, will deliver the Harben Lectures for 1911, before the Royal Institute of Public Health, on Monday, Tuesday, and Wednesday, July 17th, 18th, and 19th, at 6 P.M., in the lecture room of the Institute, 37, Russell-square, London, W.C. Lecture I. will deal with Experimental Studies on Syphilis; Lecture II. with the Biological Differentiation of Proteids by the Precipitin Reaction, with Especial Reference to the Forensic Examination of Blood and Meat; and Lecture III. with Experimental Investigations on Hog Cholera. All interested are invited to attend.

IN spite of very grave difficulties a British Section has been equipped at the International Hygiene Exhibition at Dresden, and was formally opened on June 29th. The British committee is to be congratulated on the success which has attended its persistent efforts to secure proper representation of this country at this important Exhibition.

A SCHOOL OUTBREAK OF ENTERIC FEVER.

BY R. W. C. PIERCE, M.D., B.SC. LOND.,
MEDICAL OFFICER OF HEALTH OF WOKING, ETC.

THE following outbreak is interesting and somewhat uncommon, as the spread of the infection was apparently due, not to contamination of any article of food, but to the presence of an ambulatory or possibly a carrier case at school.

Briefly the history is as follows. The head teacher of a small infants' school had to relinquish work on Feb. 17th, 1911, and was subsequently medically attended at home during some weeks for bronchial catarrh. The school was closed from Feb. 20th. The assistant teacher, who takes the second class—both classes being in the same room—became ill on Feb. 20th and was admitted to the isolation hospital with well-marked signs of enteric fever on March 2nd. Within the next three days five other cases were admitted, three of them with attacks dating from between Feb. 18th and 20th, and the two others with attacks commencing about Feb. 26th. Three of the six cases had relapses after admission. Some of the particulars are tabulated below.

—	Sex and age.	Class attended	Date of onset.	Temperature became normal.	Duration of relapse.
E. W.	F., 23 (teacher).	Class 2.	Feb. 18th–19th.	33rd day.	35th to 49th day.
S. L.	M., 7.	,, 1	Feb. 20th.	21st ,,	24th ,, 37th ,,
W. H.	M., 7.	,, 1.	,, ,,	,, ,,	—
F. S.	F., 33.	Mother of child in Class 1.	,, 19th.	27th ,,	—
W. H.	M., 4.	None.	Feb. 25th–26th.	17th ,,	21st to 32nd day.
E. D.	F., 6.	Class 2.	? Feb. 26th.	18th ,,	—

Characteristic spots were present in each case in the primary attacks and second crops in those who had a relapse. Complete clumping of typhoid bacilli was given by the serum in each case in a dilution of 1 in 50 within half an hour.

It will be seen that three of the cases were connected with Class 1 of the infants' school. The infection of W. E., who did not attend school, and also of E. D.—they being next-door neighbours—is probably to be accounted for by contact with K. D., a sister of E. D., K. D. attending Class 1. The last-named child was absent from school on Feb. 10th, 13th, 15th, and 16th, with headache and giddiness. A specimen of her blood tested for Widal's reaction on March 8th gave fairly complete clumping in half an hour in a dilution of 1 in 50. This child, who had probably suffered from a mild attack of enteric, proved to be the earliest suspicious case that could be traced in connexion with the outbreak, except for three cases of jaundice, which is sometimes associated with enteric fever, amongst the school children.

The school department in question was held in a part of another infants' school owing to their own school premises undergoing reconstruction, and the children were conveyed to and from the temporary school in two vans, respecting the overcrowding of which many complaints were made. As two of the children never rode in these vans, they may be excluded as having no connexion with the outbreak. The school drinking supply, cloak-rooms, lavatories, and closets were also utilised by the children of the other infants' department, who were located in the same building, but these were free from suspicion of having caused the outbreak, because none of the children attending this department were affected. As there was nothing in common between the cases in the matter of food-supply or proximity of dwellings (except the two cases, W. E. and E. D.) the probable sources of infection became narrowed down to the class-room.

Attention was then paid to the articles used in common by the children, such as modelling clay, sticks and cubes, pencils, paint brushes, chalk, felt rubbers, &c. It was found that an object-lesson was given on Feb. 8th and again on the 10th with a lemon and an orange which were cut up and distributed among the children, and that a batch of modelling clay was distributed to Class 1 on Feb. 10th, the assistant teacher taking part on all three occasions. The modelling clay, which was kept in a closed tin, was specially suspected owing to the constant manipulation involved in its use and was taken away for examination on March 6th. Washings from the clay rolls were planted in broth and taurocholate broth and plates made on gelatin, agar, and Drigalski medium from the resulting 24 hours' growth. The plain broth cultures gave a mixed growth in which motile organisms resembling in their appearance and movement those of the typhoid bacillus were present, but with the facilities at hand it was not found possible to isolate them. As an interval of three weeks had already elapsed since the infection had taken place the typhoid bacilli even if present at first may not have survived, although the organic matter on the clay and the exclusion of light and air would tend to make this possible.

It seems probable that the infection was introduced into the class-room by one of the children, either by soiling of the floor (and consequently of the dust of the room) by infected excreta, directly or through wetting of the boots in infected urine, or more probably by the contamination of some article such as the plastic clay, by a child suffering from a mild attack of typhoid fever, who resumed the school work with unwashed hands after visiting the water-closet. The latter supposition appears to be the more feasible, as gross contamination of the hands must have taken place if the infection of the mother of one of the children is to be connected with the school. The possibility that the last-mentioned child was a typhoid carrier was considered, but there had been no history of illness, and a specimen of the urine examined in March failed to show any typhoid bacilli. The child's father had an attack of enteric fever 17 years previously, and the father of E. D. had an attack during the South African War.

The class-room was re-opened on March 13th after thorough disinfection and destruction of all inexpensive articles, and no further cases have since been reported either from that school or from the two infected classes who resumed the tenancy of their own school on March 20th. The precaution was taken on reassembling of insisting on each child washing its hands after using the water-closet before

re-entering the class-room. It would, of course, have been more satisfactory to have found the exact source of the outbreak, but in view of the fact that it had evidently ceased to act as such the search was not prosecuted further.

THE NATIONAL INSURANCE BILL.

GENERAL and acute interest continues to be taken in the National Insurance Bill. As is set out in another column, the London County Council is viewing seriously the situation that may be created by interposing Local Health Committees between the Council and the central authority for public health, a matter which has already been brought to the notice of the Chancellor by the Association of Municipal Corporations. From Ireland and Scotland we chronicle additional evidence of the general feeling aroused by the absence from the Bill of any wage limit for medical beneficiaries, a point upon which, however, the Chancellor appears to be inflexible.

HOSPITAL REPRESENTATIVES AND THE BILL.

On Tuesday, June 27th, Sir William Cobbett presided at a meeting of representatives of the voluntary hospitals of Lancashire and Cheshire, held in the Manchester Town-hall. The meeting was called as a sequel to meetings of Hospital Representatives held in London in June at St. George's Hospital and St. Thomas's Hospital, and resulted in the adoption unanimously of a memorial shortly to be presented to the Chancellor of the Exchequer on behalf of the voluntary hospitals of Great Britain and Ireland. The memorial sets out that the voluntary hospitals must supply as heretofore accommodation for persons who will now be insured under the Bill, and who are suffering from serious conditions or require operative treatment; that their funds are derived from public subscriptions, and that they are the centres of medical education and research; that the Bill contains no provision to increase their resources, while in its present state it will reduce their subscriptions; and that the benefits to be conferred by the Bill should be extended to cover treatment in hospitals, which should be able to recoup themselves for expenses incurred in the treatment of insured persons.

THE DISPENSARIES AND THE BILL.

A CONFERENCE of representatives of dispensaries in London and the provinces was held on June 28th. Letters were read from dispensaries in many parts of the country. The feeling was unanimous that the National Insurance Bill as it stood would be most prejudicial to dispensaries whether they were provident or free, and in many cases would practically destroy them. It was pointed out that in some towns as many as a third or more of the population were members of provident dispensaries. A committee was appointed to communicate with dispensaries throughout the country with a view to their concerting measures for submitting their case to the Chancellor of the Exchequer. The following resolution was passed unanimously:—

That in the interest of many hundred thousands of the working classes who receive medical aid from dispensaries all over the country it is most desirable that these institutions, many of which have existed for very many years and are approved by the medical profession, should be utilised for the administration of medical benefits under a national insurance scheme.

THE CHARITY ORGANISATION SOCIETY AND THE BILL.

The following resolution has been adopted by the Council of the London Charity Organisation Society:—

That in view of the extremely complicated nature of the National Insurance Bill, the immense importance of the interests involved in it, and the fact that it seeks to introduce principles and methods entirely novel in the administration of this country, the results of which it is not easy to forecast, but which may in the gravest manner affect the well-being, character, and independence of the wage-earning classes, it is, in the opinion of the council of the Charity Organisation Society, indispensable that the measure should not be pressed forward until such ample time has been given to inquiry and discussion as cannot possibly be secured in the present session of Parliament.

THE TRADE UNIONS AND THE MEDICAL POSITION UNDER THE BILL.

The following resolution, having reference to the National Insurance Scheme, has been forwarded to the Prime Minister and the Chancellor of the Exchequer by the Management Committee of the General Federation of Trade Unions:—

This Management Committee of the General Federation of Trade Unions views with regret the attempts of the medical profession to exploit the National Insurance Scheme, and it is of opinion that the terms for medical treatment as offered by the Bill and explained by the Chancellor of the Exchequer are generous in comparison with those which medical men have been quite ready to accept in the past. The Management Committee is also of opinion that the proposed contributions from workmen, employers, and the State will be quite inadequate to meet the expenditure of friendly benefits if the demands of the Medical Council are acceded to.

What is the Medical Council to which the General Federation of Trade Unions makes reference?

THE IMPERIAL MEDICAL REFORM UNION AND THE BILL.

The following appeal from the central committee of the Imperial Medical Reform Union has been sent to all Members of the House of Commons:—

GENTLEMEN,—In view of the serious injury to medical men in general practice that must inevitably result from the National Insurance Bill in its present form, should it become law, we venture most earnestly to appeal to you in justice to a profession which has done so much for humanity to propose and support such amendments to the Bill during its passage through the committee stage as will render it more acceptable to medical practitioners generally. Whilst agreeing in the main with the amendments suggested by the General Medical Council and the British Medical Association, we are convinced that they do not go sufficiently far to safeguard the interests of the profession.

Firstly: The wage limit for "employed contributors" has been placed much too high, and we are of opinion from our experience of the working classes that no person whose *income from all sources exceeds thirty shillings a week* should be entitled to claim "medical benefit [Sec. 8 (a)].

Secondly: We suggest that medical officers under the scheme should be paid for actual services rendered and not by capitation allowance. This method of payment has been carried out for many years past by the National Deposit Friendly Society with satisfaction to the members and to the doctors. During the year 1910 this society paid in fees to doctors the sum of £35,251 6*s.* 9*d.*, an average of 3*s.* 2½*d.* for each member of the society. Provision should also be made for payment for operations, long distance visits, and other extra services.

Thirdly: In the interests of the patient as well as of the doctor we urge that the latter should be entitled to supply the necessary medicines.

Fourthly: We submit that doctors should not be expected to attend under the Act patients suffering from venereal diseases or illnesses, such as delirium tremens, directly arising from the excessive use of alcohol, or due to other acts of misconduct.

In conclusion we respectfully submit that if the above suggestions are embodied in the Bill the measure will be decidedly more satisfactory to the public and the whole profession. As this is not a party question and as our suggested amendments in no way infringe any vital principle of the Bill we confidently trust to receive an assurance that you will give them your support.—We are, Gentlemen, yours faithfully,

ROBERT BELL, Chairman.
GEORGE BROWN, JNO. POLLOCK SIMPSON } Hon. Secretaries.

Imperial Medical Reform Union, 17 and 18, Basinghall-street, London, E.C., June 29th, 1911.

THE NATIONAL INSURANCE BILL IN RELATION TO PUBLIC HEALTH ADMINISTRATION IN LONDON.

Report of Parliamentary Committee.

THE London County Council on July 4th received a report from its Parliamentary Committee on behalf of the various committees affected, with regard to the provisions of the National Insurance Bill from a local government point of view.

The report criticised the interposition of an independent authority, such as the proposed Local Health Committee, between the Council and the central authority for public health. The Public Health Committee in particular considered that it was inadvisable to set up a new authority having public health powers in the County of London, and that the duties of the new committee should be performed by the Council, representation being given to approved societies and deposit contributors. The Parliamentary Committee, however, could not support this suggestion, noting the Chancellor's statement to the deputation from the Association of Municipal Corporations that it would be "impossible." Criticising the composition of the Local Health Committees, the report stated that the representation proposed to be given to the Council, consisting of less than one-third, would place upon the Council some responsibility for the committee's administration, though it would be insufficient to give the Council an effective voice. While the representation of the Council on the Local Health Committee might be adequate as regards the administration of the Post Office fund, it was clearly inadequate for the

purpose of the duties in connexion with medical and sanatorium benefits and other public health duties with which the Local Health Committee would be charged. The position of this proposed independent county authority in the scheme of local government was anomalous. It would have powers and duties which either properly belonged to local government authorities or could be conveniently and efficiently performed by them. Its funds, so far as it could have any funds other than those derived from the Insurance Fund, must be obtained from the county ratepayers, whose representatives would be in a minority on the Local Health Committee. The Local Health Committee would depend to some extent upon contributions made by the bodies whose actions in matters of public health it would criticise and stimulate. On these grounds the new committee appeared to be an unsuitable body for the purpose it was intended to serve; the setting up of such an authority would cause overlapping of jurisdiction and duplication of administrative machinery; and if any additional public health powers of the kind in question were required in London they should be entrusted to the County Council. With regard to the provision of sanatoriums, the report observed that the matter was apparently left by the Bill optional to the Council, but it might be anticipated that public opinion would virtually compel the exercise of the powers. The provision in the Bill for the recovery of expenses from a local authority in default added a new complication to an already complicated system of local taxation. The clause stating that the medical officer of health of the county, at the request of the Local Health Committee, might attend meetings of the committee might lead to difficulties of administration.

The Bill in Relation to School Medical Work.

The Council's work in relation to the medical treatment of school children could not but be profoundly though indirectly affected by the Bill, which would entirely revolutionise the conditions of medical treatment and relief existing amongst the whole of the elementary school population. The wage-earning classes would be brought universally into relation with medical practitioners, and the present haphazard methods would be superseded by a definite organisation. The hospital system must be affected. Voluntary funds dependent on workers and employers, like the Hospital Saturday Fund, might disappear. The need of charitable relief for the working population, which was the *raison d'être* of the hospitals at present, would no longer exist. The hospital out-patient departments, so far as adults are concerned, will largely disappear, just as in-patient institutions and hospitals must come eventually under the supervision or control of the Local Health Committees. Under these conditions, on the one hand the out-patient departments would be freed to undertake the work of medical relief of school children; and, on the other hand very serious objections to subsidising charitable institutions which were under no official supervision or control would vanish. The disappearing (voluntary) funds would practically throw much of such hospital provision open to new arrangements and make support from public funds necessary. Under the Bill Local Health Committees were to have considerable powers of subsidising institutions for medical treatment, and under Clause 47 the erection of such institutions by local authorities was foreshadowed. For many purposes clinics must be established locally to deal with special branches of medical relief. As such fundamental changes would take place inevitably under the Bill in the organisation of medical relief amongst the working classes, the Council's position in regard to the treatment of school children could not fail to be seriously affected. To secure unity, economy, and efficiency, it would almost be necessary eventually for the Council to link up its organisation with that of the Local Health Committees, and conjointly with them to arrange for the establishment or subsidy of institutions for medical relief, the Local Health Committees being responsible for that share of the cost which would be expended in the medical relief of workers under the Insurance Scheme, and the Council for that share expended in the medical relief of school children. It seemed, therefore, that the Council would be well advised in avoiding any permanent commitments, and in looking upon all present schemes for medical treatment as provisional until the great reorganisation of the medical relief of the working classes foreshadowed in the Bill had been carried into effect.

The Financial Aspect of the Bill.

The Finance Committee, reporting upon the Bill in its financial aspects, urged that the Council should not be in the position of being forced to make up deficiencies incurred by a Local Health Committee without having some control over the operations that had led up to a deficiency. The clause which imposed a serious potential liability upon the Council and local authorities in the event of excessive sickness due to bad housing or insanitary conditions, even if workable, was inapplicable to London. The ratepayers of the county as a whole might be heavily penalised as a result of the default of a borough council, and the County Council might be involved in large expenditure on account of epidemics which it had no power to prevent. As to the provision that the Treasury and the County Council should each make good one-half of any "reasonable and proper" deficiency resulting from the work of the Local Health Committee, the Finance Committee noted that the Chancellor said to the deputation from the Association of Municipal Corporations that "Local Health Committees had no right to hypothecate either rates or taxes for the purpose of expenditure without the full and unfettered consent of the County Council and the Treasury," but this declaration did not appear to be consistent with the assurance to the medical profession in the Chancellor's speech to the British Medical Association on June 1st. On that occasion he suggested very specifically that the Local Health Committees had behind them the rates and taxes in case their funds for medical benefit were insufficient. It appeared to the Finance Committee to be very doubtful whether, in actual practice, the local authorities would have any real discretion in the matter under the Bill as it now stood. The position would resolve itself largely into making good a deficiency brought about by past action unless the local authorities were consulted at an earlier stage.

The Parliamentary Committee, though unable to adopt the suggestion of the Public Health Committee that the powers and duties of the new committee should be conferred on the Council, advised that amendments in the National Insurance Bill be sought to provide that:

1. The Council shall not be liable to make good out of the county fund one-half of any sums expended on medical benefits in excess of the amount received from the Insurance Fund by the Local Health Committee.
2. The Council shall not be liable to provide or maintain sanatoria.
3. Complaint of default by a local sanitary authority shall be made (in London) in the first instance to the County Council, which shall make any necessary order, the Local Government Board being appealed to only on default of the County Council.

The report was only reached towards the end of a long sitting, and detailed consideration of the proposed amendments to the Bill was adjourned until next week.

EPSOM COLLEGE.

THE annual general meeting of the governors of Epsom College was held at the office, 37, Soho-square, London, on Friday, June 30th, Sir HENRY MORRIS, the treasurer, being in the chair. Among those who attended were Mr. J. Paul Bush, Dr. Charles Caldecott, Dr. Charles W. Chapman, Sir William S. Church, Mr. Andrew Clark, Dr. W. Collier, Sir Dyce Duckworth, Dr. Arthur Grayling, Dr. F. de Havilland Hall, Mr. Horace E. Haynes, Mr. J. B. Lawford, Mr. J. H. Morgan, Sir Shirley F. Murphy, Dr. F. Needham, Sir R. Douglas Powell, Dr. Guthrie Rankin, Dr. St. Clair B. Sbadwell, Surgeon-General Sir Lionel D. Spencer, Dr. Frederick Taylor, Dr. Herbert Taylor, and Dr. J. Roberts Thomson.

The SECRETARY read the list of successful candidates for pensionerships and foundation scholarships as follows:—

PENSIONERSHIPS.	Votes.
1. Agnes Paterson	7827
2. Hermine Armstrong	5778
FOUNDATION SCHOLARSHIPS.	
1. Hugh E. Cutfield	8286
2. Alec F. Watson	7973
3. Colin P. Ledward	7555
4. Francis R. M. Buckell	7446
5. Charles E. Carruthers	5822
6. Thomas H. W. Procter	5644

The SECRETARY stated that Robert E. P. Shearer and A. W. Glover Moore would be appointed foundation scholars, under By-law 24, at the Council meeting which would be held immediately after that meeting.

In moving the adoption of the report for the past year the CHAIRMAN referred to the loss which the College had sustained in the death of Sir Constantine Holman, who for over 30 years as an active member of the Council, and for 19 years of that period as treasurer, had so ably promoted the interests of the College by his energy and wisdom. Although there already existed at the College a memorial of his labours in the Holman Reading-room, the Council was about to place a suitable tablet in the College chapel as a mark of its appreciation of his conspicuous efforts on behalf of the institution. After referring briefly to the salient points dealt with in the report the Chairman drew attention to the decision recently arrived at by the General Medical Council in regard to the recognition of approved secondary schools as institutions in which medical study may be commenced, and mentioned that several members of the General Medical Council paid a visit to the College a few weeks ago and had expressed their gratification at inspecting the well-equipped laboratories for the teaching of science. He said that at the last meeting of the General Medical Council one of these members expressed the opinion that Epsom College ought to be recognised as an institution in which medical study may be commenced, as it was impossible to go round that school without recognising that the whole system of scientific teaching there was of a higher order than that found in the average medical school. At the same meeting another member of the General Medical Council who had visited Epsom College expressed the opinion that the school ought to be on the list of approved institutions in which medical study may be commenced, and stated that he was perfectly willing to propose a motion to that effect.

The report of the Council to the governors stated that in spite of the demands which constantly are being made upon the purses of all classes the receipts from annual subscriptions again showed an increase, this satisfactory feature being in a great measure due to the zealous efforts of honorary local secretaries and other friends of the College. Whilst expressing the cordial thanks of the governors to all who had rendered assistance, the Council earnestly asked for a continuation of their help in view of the fact that a sum of close upon £5000 must be obtained by means of annual contributions in order that the full number of 50 pensionerships and 50 foundation scholarships might be maintained. There were at the present time on the books of the College 49 ordinary pensioners, 8 Pugh pensioners, 10 France pensioners, 14 Da Silva pensioners, 3 Morgan annuitants, 5 Highett pensioners, of whom two receive £30 and three receive £10 a year, 1 R. R. Cheyne annuitant, and 4 Brodie Sewell pensioners. The election that day would bring the number of ordinary pensioners up to 50. The governors would be glad to learn that under the will of the late Mrs. Mary Helen Christie, of Ribsden, Windlesham, Surrey, who died in February last, a legacy of £3200 had been bequeathed to the College to provide two pensions of at least £40 each for medical men. The Council also had pleasure in reporting the receipt of a donation of £50 from Miss Esther Du Bois, the interest thereon to be spent in prizes for boys on the Foundation, in memory of Anne Du Bois. The general work and the discipline of the school had been satisfactory, the various games having been played with the usual enthusiasm, and the school institutions being in a flourishing condition. The study of aeroplanes and the problems of flight had proved to be very popular with the boys. A team again went to Bisley to shoot for the Ashburton Shield and took the thirty-ninth place out of 55 schools. There was an unmistakeable improvement in the shooting and the Officers' Training Corps was doing excellent work.

The report further stated that since the last annual general meeting of the governors the Council had inquired very carefully and exhaustively into the administration of the College infirmary, as well as into the questions of sleep, dress, dietary, and medical inspection of the boys, in order that the governors might rest assured that such matters would be brought into line with modern requirements. An inspection of the whole school was held in June, 1910, under the auspices of the Oxford and Cambridge Schools Examination Board, and the report received by the Council was most satisfactory. The examiners also commented on the efficiency of the masters, and on the fact that they so conducted their classes as to attract the intelligent interest and attention of the boys in their work. Since the last annual general meeting six boys had passed the whole or a part of the first examination for medical degrees of the University of London, 14 boys had passed the matriculation examination of the same University, 9 boys had gained the higher certificate of the Oxford and Cambridge Schools Examination Board, and 25 had gained the lower certificate. Last year the Du Pasquier scholarship was awarded to C. W. S. Davies-Jones, the Stone scholarship was given to W. F. Marshall, and the Jenks Memorial scholarship was awarded by the Royal College of Surgeons of England to G. Gibbons. The hospital scholarships were awarded as follows: St. Bartholomew's, M. S Beaumont; London, J. N. Deacon; Middlesex, H. Wearne; St. Mary's, R. M. Handfield-Jones; St. Thomas's, G. M. Kendall; and University College, together with the Carr exhibition, which goes with it, H. Ll. G. Hughes.

The report having been adopted, the usual formal business was transacted, after which a cordial vote of thanks to the chairman for his indefatigable labours as treasurer was proposed by Sir WILLIAM CHURCH, and was carried with acclamation.

MEDICINE IN SCANDINAVIA.

No. II.—DENMARK.[1]

Number of Medical Men and their Incomes.

DENMARK, with a population of 2½ millions, has about 1800 medical practitioners, who are, therefore, in the ratio of 1 to 1400 inhabitants. The population is fairly dense, for the area of the country is only 14,553 square miles; but the medical man's lot is not altogether a happy one, for both the cost of living and competition have much increased lately, whereas his fees have remained the same. Medical earnings in some cases do not exceed from 3000 to 4000 kroner (£166 to £222), and incomes ranging from 40,000 to 50,000 kroner (£2220 to £2777) are only made by a few popular specialists. In the period 1908-09 there were 502 medical men in Copenhagen who paid taxes. The income (from all sources) of 220 of these men was rated at less than £277 each. In 1907 the average income for medical men in Copenhagen from the age of 25 to 30 was £98; from 30 to 40, £211; from 50 to 60, £624; and from the age of 60 and over it was £603. These sums represent interest on capital as well as earned incomes, but the average amount of the latter far exceeds that of the former.

Medical Education.—Government Appointments.

Medical degrees are given only by the University in Copenhagen, where the student takes about seven years to qualify. Two examinations are held: Part I. includes anatomy, physiology, chemistry, and physics; Part II. includes medicine, surgery, and midwifery, and it must be taken not more than six years after Part I. Clinical appointments are held at the hospital before Part II. is taken, and after qualification resident hospital appointments may be held for a year. There are no special diplomas corresponding to the F.R.C.S. or D.P.H., but the medical man desirous of specialising in any particular branch of the profession attends at the special hospital department he may choose and holds its appointments. He may also take the degree of M.D., the original contributions to which may be purely surgical.

There are about 100 Government district medical officers in the country, which is divided into 12 areas. Each area is managed by a senior medical officer, who in his turn is under the control of a central "Sundhedsstyrelse" or Sanitary Board, the establishment of which in its present form dates from 1909. For the larger towns there are special medical officers. The system of Government medical officers has been found faulty to such an extent that its reorganisation has been placed in the hands of a special medical commission whose findings have not yet been published.

Organisation of the Medical Profession.

The Danish Medical Association (Den Almindelige Danske Laegeforening) was founded in 1857 by 80 medical men to protect the interests of the profession. In 1910 its membership had risen to about 1600, and its sphere of influence had

[1] No. I. was published in THE LANCET of July 1st, 1911, p. 36.

increased proportionately. One of its most important functions in recent years has been the supervision of contract medical practice, which has assumed enormous proportions. The number of sickness and accident societies recognised by the Government in 1907 was 379, with a total membership of 473,694. The conflicts which have inevitably arisen between these societies and their medical officers have repeatedly proved the value of the Association to its members.

The Association's campaign against quackery and secret remedies has been active and sustained, but its efforts have hitherto been largely ineffectual. Homœopaths and others whose medical practice is not based on scientific principles are excluded from the Association's membership. Although the branches of the Association are subordinate to the central organisation they are allowed considerable latitude in the framing of their own rules, and such restrictions as those with regard to advertising outside the medical press vary considerably in different localities. Disputes of a professional nature arising between members are settled by arbitration, and the refusal to abide by the decision of the arbitrators is punished by loss of membership. Loss of membership (but not of the right to practise) is also incurred if the Association finds a member guilty of unprofessional conduct, or if the executive of a branch of the Association at the request of half its members or if the executive of the Association advocates dismissal of a member, provided that the proposal is supported by a majority of the votes given in writing by the members of the local branch. The disciplinary powers of the Association have also been effectually applied to the price-cutting tactics of insurance companies and other bodies, and members must now charge for their services according to the Association's tariff. Members are also forbidden to issue certificates to insurance companies for a fixed yearly salary. The Association has, moreover, laid down definite rules for the conduct of its members in their mutual relations.

The Association has materially influenced the framing of recent sanitary laws, notably those relating to tuberculosis and prostitution. As an example of the anomalies which meet the medical practitioner in Denmark, and which require the vigorous action of the Association, may be mentioned the unrevoked law of 1825, according to which the district medical officer is bound to treat venereal disease at the rate of 4 kroner per patient, the fee being paid only if the treatment is successful. In practice, however, this law is commonly evaded. Another anomaly the formal removal of which the Association has secured is the surgical part played by barbers, who were eligible to practise surgical first aid in Copenhagen until the end of the last century.

Sanatoriums.—Scientific Contributions.—Medical Literature.

The campaign against tuberculosis has been conducted largely on sanatorium lines, and the number of sanatoriums, public and private, now in existence actually exceeds the demand.

Danish contributions to the science of medicine include those of W. Meyer (adenoids), B. Bang (tuberculosis), J. Petersen (history of medicine), C. Gram (bacteriology and medicine), H. Howitz (gynæcology), C. Rovsing (surgery), C. J. Salomonsen and T. Madsen (bacteriology), G. Dreyer (professor of pathology at Oxford), C. Bohr and V. Henriques (physiology), J. C. Bock (pharmacology), K. Faber (medicine), M. Tscherning (physiological optics), E. Ehlers (leprosy), H. Mygind and E. Schmiegelow (oto-laryngology), S. Saxtorph (surgery), and C. O. Jensen (cancer). The late Dr. Finsen's works on light as a therapeutic agent are known to all, and much original work of a similar character is still being carried on in Denmark.

The medical literature of the country has reached a high scientific standard. The senior journal is *Ugeskrift for Laeger*, the official organ of the Association. The weekly journal, *Hospitalstidende*, edited by Professor Rovsing, usually contains excellent original papers and reviews of recent medical literature. Other journals are *Dansk Klinik*, *Nordisk Tidsskrift for Therapi*, which is a monthly journal, and *Biblsotek for Laeger*, which appears every other month. The majority of text-books in use are German. English and French works are less known, but most Danish medical men read all three languages.

The author wishes to thank Dr. Christopherson, the secretary of the Medical Association, for valuable assistance in providing much of the material for this paper.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are among the amounts received at the Mansion House up to June 30th (total, about £17,500):—

	£	s.	d.
St. Paul's Cathedral	336	0	0
Westminster Chapel, with additions	296	0	0
St. Peter's, Cranley-gardens	225	0	0
St. Jude's, Earl's Court	225	0	0
"F. G. D."	200	0	0
Theistic Church, Swallow-street, St. James's (Rev. Chas. Voysey)	200	0	0
Holy Trinity, Tulse Hill	155	0	0
Bromley Parish Church with Chapel of Ease and Mission	145	0	0
Aldenham Parish Church	135	0	0
St. Peter's, Vere-street	125	0	0
St. George's, Bickley, and Widmore Mission	120	0	0
St. Mark's, Hamilton-terrace	114	0	0
St. Simon's, Upper Chelsea	114	0	0
Lyndhurst Road Congregational Church, Hampstead	113	0	0
St. John's, Penge	110	0	0
Rosslyn Hill Church	107	0	0
Christ Church, Gipsy Hill	97	0	0
All Saints', Margaret-street	94	0	0
Regent-square Presbyterian Church	87	0	0
Union Chapel, Islington	80	0	0
Kensington Presbyterian Church	77	0	0
Greek Church, Bayswater	75	0	0
Holy Trinity Parish, Eltham	70	0	0
Immanuel, Streatham	64	0	0
Marylebone Presbyterian Church	59	0	0
Stamford Hill Congregational Church	55	0	0
St. Michael's, Blackheath	55	0	0
The Oratory, South Kensington	54	0	0
Chapel Royal, Hampton Court	51	0	0
St. George's, Perry Hill	50	0	0
Christ Church, Lee	50	0	0
Holy Trinity, Upper Tooting	46	0	0
St. John's, Notting Hill	46	0	0
Weybridge Church	45	0	0
St. Saviour's, Paddington	44	0	0
St. James's, Hatcham	44	0	0
St. Stephen's, Portland Town, with Missions	44	0	0
Kensington Congregational Church	44	0	0
St. Stephen's, Westminster	43	0	0
St. Cuthbert's, West Hampstead	39	0	0
Grosvenor Chapel	39	0	0
St. Paul's, Camden-square	36	0	0
St. Mary's, West Kensington	34	0	0
All Saints', Friern Barnet	33	0	0
St. Paul's, Harringay	33	0	0
Heath Green Baptist Church, Hampstead	31	0	0
St. Mary Magdalene, Wandsworth	31	0	0
St. Paul's, Wimbledon Park	31	0	0
Christ Church, Streatham Hill	31	0	0
St. Mary's, Plaistow	30	0	0
Acton Parish Church	30	0	0
St. Andrew's Presbyterian Church, Upper Norwood	29	0	0
St. Michael's, Stockwell	28	0	0
St. Alban's, Streatham	28	0	0
Christ Church, Forest Hill	27	0	0
St. Martin's-in-the-Fields	27	0	0
St. Luke's, West Norwood	27	0	0
St. Andrew's, Alexandra Park	26	0	0
All Saints', St. John's Wood	26	0	0
Ascension, Blackheath	26	0	0
Finsbury Park Wesleyan Circuit	26	0	0
Crayford Parish Church	25	0	0
St. George's, Tufnell Park	24	0	0
Paddington Congregational Church	24	0	0
Epsom Parish Church	24	0	0
Streathill Hill Congregational Church	23	0	0
St. Jude's, East Brixton	23	0	0
Merton Parish Church	23	0	0
All Saints', Leyton	22	0	0
Trinity Church, Wimbledon	22	0	0
Southwark Cathedral	22	0	0
St. Thomas's, Woolwich	22	0	0
St. Andrew's, Whitehall Park	22	0	0
St. John's, Palmer's Green	22	0	0
St. George's, Southwark	21	0	0
St. Jude's, Chelsea	21	0	0
Mr. Francis Reckitt	21	0	0
Vintners' Company	21	0	0
Barnes Parish Church	21	0	0
Charterhouse Chapel	20	0	0
St. Thomas's, Telford Park	20	0	0
St. Mary's, Balham	20	0	0
Holy Trinity, Dartford	20	0	0
Miss Oliverson	20	0	0
Holy Trinity, Kilburn	20	0	0
Miss F. Druce	20	0	0
Miss E. C. Druce	20	0	0
In Memoriam, Crosby Lockwood, S. L., and D. E. L.	20	0	0
Lady Northwick	20	0	0
Miss C. M. Bulkeley	20	0	0
Mrs. Hordern	20	0	0
Upper Clapton Congregational Church	20	0	0
All Saints', Putney Common	20	0	0
Tooting Wesleyan	20	0	0

MEDICINE AND THE LAW.

Murder Committed by a Person under the Influence of Mental Distress.

AT the Old Bailey recently a very painful trial resulted in the conviction of a flower-seller, Margaret Murphy, 38 years of age, for the murder of her seven months old child. Murphy was the mother of six children, three of whom were dependent upon her, as she lived apart from her husband. She was unable to pay her rent, and having gone to Epsom to sell flowers and lost the whole of her money there, after her return, according to her statement, she remained awake all night through worry. In the morning she obtained some spirits of salts, some of which she gave to her baby, causing its death, and herself took the rest, but, although she was found unconscious, she recovered. Evidence was given by Dr. W. C. Sullivan, medical officer at Holloway Prison, to the effect that having had the prisoner under his observation for nearly a week he was of the opinion that she did not fully know what she was doing when she administered poison to the child. She had told him that she was anxious about her rent and afraid that she would be sent to prison, and he considered her to be emotionally unbalanced when she committed the act, but could not say that there was any mental disease discoverable, or that at the time of the alleged murder she was insane. Mr. Justice Darling in summing up dwelt upon the painful nature of the case, but asked the jury to remember that they had a duty to perform, and intimated to them his opinion that the occasion was rather one for the exercise of the clemency of the Crown upon the advice of the Home Secretary than for a verdict of insanity. A verdict of "Guilty" was returned, coupled with a strong recommendation to mercy, and sentence of death was passed in the usual form. The death sentence will not be carried out, and the case is one of those which show the difficulty of distinguishing the varying degrees of mental disturbance which may qualify the guilt of a person charged with "Wilful murder." It is also a case likely to strengthen the hands of those who are seeking to introduce such changes in the procedure relating to trials for this crime as will prevent the solemn death sentence being pronounced when it is extremely unlikely that it will be carried out.

Keeping a Lunatic in an Unlicensed House.

At the Old Bailey recently Jane Mathieson, keeping a boarding-house in Penywern-road, London, was indicted for taking charge of a lunatic for payment in an unlicensed house, and also for unlawfully neglecting and ill-treating her. The lunatic in question was an elderly lady named Blackley, who was found to have purchased annuities amounting to £260 a year, and to have afterwards assigned the whole of this income to the prisoner, in whose house she had for some time resided on the terms that she should be provided in return with board and residence. A lady, who had been employed by the prisoner as a manageress, had had her attention attracted by cries proceeding from the basement and had been told by the prisoner that it was occupied by "a rich old lady who is worth more to me than all the other boarders." The manageress called the attention of the police to the matter, including the manner in which the old lady in question was apparently being fed, and inquiries followed, with the result that Miss Blackley, who was discovered in the basement ill-clad and neglected, was certified as insane and removed to an asylum, summonses being issued against the proprietress of the house. Mathieson pleaded guilty to the first count of the indictment, for unlawfully taking charge in an unlicensed house, and was ordered to pay a fine of £50 and to be imprisoned until the money should be paid. It is desirable that all possible publicity should be given to a case of this kind, as although such incidents may not be common, they occur from time to time. A great deal of unnecessary suffering is endured by the victims, and, as a rule, discovery can only take place through the intervention of some outside person who has to assume the responsibility of interfering. It is well that all should know that the police will interest themselves in such a case, and by taking the necessary steps to inquire into it can secure proper treatment for the afflicted person with punishment for those who have taken advantage of the helpless.

The Proposed Weir Hospital at Streatham.

The Charity Commissioners are about to seal an order establishing their revised scheme for giving effect to the will of Benjamin Weir which was proved in the Principal Registry of the Court of Probate on April 24th, 1902, for the provision of a hospital and dispensary at Streatham. It will be remembered that the original scheme of the Commissioners, disallowed by the Law Courts at the instance of the Wandsworth Borough Council, proposed to hand over the bulk of the Weir bequest to the Bolingbroke Hospital, Battersea. The new scheme provides, *inter alia*, that "the trustees of the charity shall establish on the site of the messuage and tenement known as The Hawthorns, a Cottage Hospital for the benefit of the inhabitants of the parish of Streatham and the neighbourhood, with such a number of beds and such accommodation for the staff, appliances, equipment, offices, and conveniences suitable for the administration of the hospital or the affairs of the charity as having regard to the funds applicable to, or available for, the purposes of the charity, the trustees may think proper. The staff of the hospital shall consist of such resident and other medical officer or officers, matron, dispenser, nurses, servants, and attendants as the trustees may from time to time consider necessary. The hospital shall comprise an out-patient department, with or without a dispensary. For the purpose aforesaid, the trustees may either adapt the existing buildings on the said site, or pull down and erect on the said site and on any site acquired as hereinafter mentioned new buildings in accordance with plans to be approved by the Charity Commissioners. They may also, with the approval of the said Commissioners, acquire by purchase any land and hereditaments contiguous to the said premises known as The Hawthorns which may be required for the enlargement of the said site, so as to render it convenient for the objects of the charity. The trustees shall use the messuage and tenement known as No. 22, Old Devonshire-road, either as a dispensary or otherwise as an adjunct to and as part of the hospital until they shall, with the approval of the Commissioners, otherwise determine. Subject to the provisions of the said will and of this scheme, the hospital shall be administered by a committee of management, constituted as directed by the said will, in accordance with rules to be made from time to time by them." The property of the charity, as shown by a schedule, comprises, besides the two houses known as The Hawthorns (No. 17, Grove-road, Clapham Park) and 22, Old Devonshire-road, Balham, consols and other stocks and shares, &c., of the gross value of about £120,000.

THE MEDICAL EXAMINATION OF DRIVERS OF MECHANICALLY PROPELLED VEHICLES.—The proprietors of mechanically propelled public service vehicles in the metropolis have been notified by the police that in future all applicants for licences to drive public service motor vehicles will have to undergo a medical examination or produce a certificate as to fitness.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL.—Viscount Portman presided on June 30th at a meeting at 22, Portman-square, London, for the inauguration of a ladies' association in connexion with Queen Charlotte's Hospital, Marylebone-road. He explained that the object of the association was to obtain increased support for the hospital and to spread a knowledge of the excellent work in which it had been engaged for nearly 160 years. Most useful work might also be done by a ladies' association in providing linen for the mothers and infants in the hospital. Sir Samuel Scott, M.P., chairman of the committee of management, referred to the increasing difficulty experienced in obtaining subscriptions for hospitals, and hoped that the ladies' association would be instrumental in increasing the income from this source. The committee wanted ladies to come and see the hospital and become interested in the work. Dr. W. J. Gow (senior physician) spoke of the valuable work done by the hospital, and urged the importance of a ladies' association. At other hospitals they had been most useful. A resolution for the formation of a ladies' association was passed. Viscountess Portman was elected president of the association and an executive committee was formed.

Public Health.

THE PUBLIC HEALTH OF GIBRALTAR IN 1910.

THE annual report on the public health of the civil population of Gibraltar for the year 1910 shows that the inhabitants of this colony (other than military) number 18,134, of whom 15,451 form the "fixed civil population"—that is, British subjects; while "resident aliens" number 2683: there has been a decrease of 217 since the numeration at the end of 1909. Under the exceptional conditions prevailing in this fortress such a decrease is satisfactory; it would indeed be more satisfactory if the heading "resident aliens" were to disappear altogether. The birth-rate, 25·2 per 1000 living, is the lowest but one yet recorded; it is practically the same as that for England and Wales (25·6) in 1909, and contrasts strongly with the rate of 36·7 registered in Malta. The general death-rate was 18 per 1000, which was higher than in any year since 1905. The deaths of children under one year were at the rate of 135 per 1000 births, not an excessive figure considering the peculiar conditions of the place, but a disappointing sequel to the very low rate of 73·4 in 1909. Of the total 53 deaths under one year, inflammation of the stomach and bowels accounted for 24, and inflammation of the lungs for 8. The medical officer of health hopes that classes of instruction may be started for the education of mothers in the rearing of infants and the care of the home. Of the infectious diseases notified, tuberculosis (66 cases), whooping-cough (64), and measles (59) were the most prevalent. The measles outbreak was mild in character, only one death resulting; scarlet fever cases numbered 31, but none were fatal; of diphtheria there were 13 cases, scattered in distribution, and with no definite cause to be traced; five of these were fatal. There were 14 cases of small-pox, 4 being contacts, and 3 others evidently infected in Linea. The origin of the remaining cases is considered to have been due to Spanish workpeople coming into Gibraltar when sickening for the disease or convalescent. It is satisfactory to learn that all the cases were adults not vaccinated since infancy, the revaccination ordinance having protected the children and the young population. There were only three cases of Mediterranean fever, though from 10 to 15 per cent. of the goats still yield a reaction with M. melitensis; their milk is therefore dangerous in the raw state. Enteric fever was notified in 25 cases, of which 20 contracted the disease on the Rock; there were 6 deaths; no definite cause is assigned. Tuberculosis appears to be increasing: 66 cases were notified and 28 deaths occurred, compared with 46 cases and 25 deaths in the previous year. The health officer mentions that compulsory notification was introduced in 1906, but that nothing has been done to ameliorate the lot of those suffering from the disease, or to protect those who live in proximity with them from being infected. Several instances are given in which transmission from one member of a family to another appears to have occurred. It is urged that a tuberculosis dispensary be established, where patients can be treated and educated in the measures necessary to safeguard other members of the household from infection; and that cases of the disease be tracked out in connexion with those under treatment; some such scheme, it is hoped, may be brought into operation before long. For more serious cases a sanatorium would be required. A committee has been appointed to inquire into the whole question.

Perhaps the most important matter as regards sanitation in Gibraltar is the extremely close aggregation of the houses, and the fact that the large majority of them are of the tenement order; many of these consist of single rooms. As the health officer very truly says, it is only by the abolition of the most crowded and insanitary areas that much improvement can be effected in certain parts of the town. It is understood that long leases are not now granted; and if Gibraltar is to be regarded as a fortress rather than a colony the correct policy would be not only to retain, but to recover the power over all property in land in order that it may be dealt with at discretion in the higher interests of the community. A case has occurred in the past year where a plot of ground of 5500 sq. ft. has been acquired by the Commissioners, with the help of the Colonial authorities, on which an open space will be formed. The value of Gibraltar consists in its being an impregnable fortress, and a fortress is not impregnable if it is so overcrowded as to be insanitary. Moreover, the water-supply is by no means unlimited; the summer dry weather of 1910 was prolonged into December, such an absence of rain during September, October, and November not having occurred since 1882; fortunately, heavy rains in the previous wet season had left a full storage-supply and condensing was only required for a few days. It is understood that additional storage for 2,000,000 gallons is to be provided, also an extension of the catchment area. Improvements have been made in the sewerage system, some part of the old deep sewer from St. Jago's barracks, through Queen-street and Town Range, having been relaid; during the present year this work of relaying the most defective sewers will, it is hoped, be completed. Refuse is efficiently disposed of in a destructor, and before long it is expected that night-soil from various War Department premises will also be consumed in this way so as to avoid nuisance in Catalan Bay and at the Eastern Beach.

This report by Major C. E. P. Fowler, R.A.M.C., medical officer of health and sanitary officer to the garrison, shows what a careful watch is kept on all the conditions affecting the public health both of the civil and of the military populations; the position is a difficult one to hold and requires considerable tact and administrative ability on the part of its occupant. The excellent results obtained are most satisfactory.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 9211 births and 3623 deaths were registered during the week ending July 1st. The revised estimate of the population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had declined in the 11 preceding weeks from 16·8 to 11·3 per 1000, did not exceed 11·7 in the week under notice. During the 13 weeks of the past quarter the annual death-rate in these towns averaged 13·8 per 1000, and in London during the same period the mean annual death-rate did not exceed 13·2 per 1000. The recorded annual death-rates during last week in the 77 towns ranged from 3·1 in Hornsey, 4·6 in Bournemouth, and 6·9 in Northampton, to 17·6 in Sunderland, 17·7 in Great Yarmouth, and 19·8 in Walsall. The 3623 deaths from all causes in the 77 towns last week showed an increase of 137 upon the low number in the previous week, and included 268 which were referred to the principal epidemic diseases, against 264 and 273 in the two preceding weeks. Of these 268 deaths, 76 resulted from measles, 70 from infantile diarrhœa, 62 from whooping-cough, 35 from diphtheria, 17 from scarlet fever, and 8 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases, which had been equal to 1·2 and 0·9 per 1000 in the two previous weeks, was again last week 0·9. The fatal cases of measles in the 77 towns, which had been 125, 124, and 81 in the three preceding weeks, further declined last week to 76, and were fewer than in any previous week of this year; the highest annual death-rates from this disease recorded in these towns last week were 1·2 in Wigan and in Bolton, and 2·8 in Great Yarmouth. The 70 deaths attributed to infantile diarrhœa in the 77 towns were fewer by 18 than those returned in the previous week; they included 15 in London and its suburban districts, 6 in Birmingham, 13 in Liverpool, and 6 in Manchester and Salford. The fatal cases of whooping-cough, which had been 81, 69, and 63 in the three preceding weeks, further declined to 62 last week, but caused annual rates equal to 1·4 per 1000 in Sunderland and 2·2 in Bootle. The 35 deaths referred to diphtheria exceeded the number in the previous week by 14, and included 11 in London and its suburban districts, 6 in Manchester and Salford, and 2 both in Leeds and in Newport (Mon.). The 17 fatal cases of scarlet fever also showed a slight increase on the number in the previous week; 3 occurred in Birmingham, and 2 each in Bristol, Coventry, and Leeds. The 8 deaths referred to enteric fever corresponded with the low number in each of the two preceding weeks. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had increased in the 11 preceding

weeks from 982 to 1223, had further risen to 1226 at the end of last week; 163 new cases of this disease were admitted to these hospitals during the week under notice, against 190 and 159 in the two previous weeks. These hospitals also contained 774 cases of diphtheria, 433 of measles, 278 of whooping-cough, and 33 of enteric fever, but not one of small-pox. The 961 deaths from all causes in London showed an increase of 40 on the exceptionally low numbers in the previous week, and included 117 which were referred to diseases of the respiratory system, against 141, 139, and 111 in the three preceding weeks. The deaths attributed to different forms of violence in the 77 towns, which had declined from 177 to 136 in the five preceding weeks, rose again to 169 in the week under notice; 335 inquest cases were registered. The causes of 29, or 0·8 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during last week were duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, and in 55 other smaller towns; the 29 uncertified causes of death in the 77 towns last week included 10 in Birmingham, 5 in Liverpool, and 2 in Bootle.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, with an estimated population of 1,710,291 persons, 945 births and 467 deaths were registered during the week ending July 1st. The annual rate of mortality in these towns, which had declined in the five preceding weeks from 17·7 to 13·3 per 1000, rose again to 14·2 in the week under notice. During the 13 weeks of the past quarter the annual death-rate in these towns averaged 16·7 per 1000 of the revised estimate of their population, and exceeded by 2·9 the revised mean rate during the same period in the 77 large English towns. The annual death-rate during the week under notice in the eight Scotch towns ranged from 10·2 in Aberdeen and 11·6 in Leith, to 16·0 in Perth and 17·4 in Dundee. The 467 deaths from all causes in the eight towns last week showed an increase of 32 on the low number in the previous week, and included 63 which were referred to the principal epidemic diseases, against 64 and 58 in the two preceding weeks; of these 63 deaths, 22 resulted from whooping-cough, 20 from diarrhœa, 13 from measles, 5 from diphtheria, and 3 from scarlet fever, but not one either from enteric fever or small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 1·9 per 1000, and exceeded by 1·0 the mean rate from the same diseases in the 77 English towns. The fatal cases of whooping-cough in the eight towns, which had declined in the four preceding weeks from 43 to 25, further declined last week to 22, of which 13 occurred in Glasgow, 3 in Aberdeen, and 2 in Edinburgh. The 20 deaths attributed to diarrhœa showed a marked increase upon the numbers in recent weeks, and included 7 in Glasgow and 5 in Dundee; 16 of the 20 deaths from this disease were of infants under two years of age. The 13 fatal cases of measles were fewer by 3 than those returned in the previous week; 11 occurred in Glasgow and 2 in Perth. Of the 5 deaths referred to diphtheria, 3 were returned in Glasgow and 2 in Perth. A fatal case of scarlet fever was registered in Glasgow, Edinburgh, and Greenock. The deaths referred to diseases of the respiratory system in the eight towns, which had been 49 and 51 in the two previous weeks, declined to 48 in the week under notice, and were 7 below the number returned in the corresponding week of last year. Of the 467 deaths from all causes in the eight towns last week, 157, or 34 per cent., were recorded in public institutions, and 8 were attributed to different forms of violence. The causes of 16, or 3·4 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons (based on the recent Census numbers), 836 births and 374 deaths were registered during the week ending July 1st. The annual rate of mortality in these towns, which had declined in the four preceding weeks from 17·1 to 13·5 per 1000, rose again to 17·0 in the week under notice. During the 13 weeks of the past quarter the annual death-rate in these towns averaged 17·9 per 1000; the mean rate during the same period in the 77 English towns did not exceed 13·8 per 1000, and in the eight principal Scotch towns was 16·7 per 1000. The annual death-rate during the week under notice in the 22 Irish towns was equal to 19·5 in Dublin (against 11·1 in London), 15·7 in Belfast, 18·4 in Cork, 14·1 in Londonderry, 14·9 in Limerick, and 5·7 in Waterford; in the 16 smallest of these Irish towns the mean annual death-rate last week was equal to 16·3 per 1000. The 374 deaths from all causes in the 22 towns last week showed an increase of 77 upon the low number in the previous week, and included 21 which were referred to the principal epidemic diseases, against 23 and 27 in the two previous weeks; these 21 deaths were equal to an annual rate of 1·0 per 1000, exceeding by but 0·1 the mean rate from the same diseases in the 77 English towns. These 21 deaths from the principal epidemic diseases in the Irish towns last week included 9 from measles, 6 from infantile diarrhœa, 3 from whooping-cough, 2 from diphtheria, and one from typhus, but not one from scarlet fever, enteric fever, or small-pox. The 9 fatal cases of measles exceeded by one the number in the previous week, and included 7 in Dublin, and 1 each in Cork and Newtownards. Of the 6 deaths attributed to infantile diarrhœa (fewer by 4 than those in the previous week) 3 occurred in Dublin and 3 in Belfast. The 3 fatal cases of whooping-cough included 2 in Dublin and 1 in Belfast. Both the deaths referred to diphtheria occurred in Dublin; and the fatal case of typhus was registered in Belfast. The deaths referred to diseases of the respiratory system which had been 64 and 48 in the two previous weeks, rose again last week to 54. Of the 374 deaths from all causes in the 22 towns last week, 113, or 30 per cent., were recorded in public institutions, and 9 were referred to different forms of violence. The causes of 20, or 5·3 per cent., of the deaths registered in the 22 towns during the week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death in the week under notice did not exceed 0·8 per cent. in the 77 large English towns, and was equal to 3·4 per cent. in the eight principal Scotch towns.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff-Surgeons: T. H. Vickers, to the *Africa*, additional, for Nore Subdivision, Home Fleet; G. Ross, to the *Victory;* A. Davidson, to the *Cormorant*, additional, for Gibraltar Hospital and for Dockyard duties; and E. F. Ellis, to the *Wildfire*, for R.N. Barracks and Sheerness Dockyard. Surgeons: J. S. Austin, to the *Victory;* L. C. Rowan-Robinson, to the *Victory*, additional, for disposal; and P. M. Rivaz to Devonport Dockyard.

ROYAL ARMY MEDICAL CORPS.

Colonel R. W. Ford, D.S.O., from the Military Hospital at Tidworth Park, Salisbury Plain District, has taken up duty as Administrative Medical Officer in the Woolwich District. Lieutenant-Colonel L. T. M. Nash has been granted six months' leave of absence home from India. Major W. Hallaran has been transferred from the Third (Lahore) Division and posted to the Military Hospital at Jhansi. Major I. A. O. MacCarthy, from Guildford, has taken up duty at Woolwich. Major M. Swabey, from Secunderabad, has been appointed to the Station Hospital at Wellington, Madras Presidency. Major C. T. Samman has been appointed Specialist in Mental Science to the Southern Army, India. Major W. H. S. Nickerson, V.C., has taken up duty as Officiating Sanitary Officer to the First (Peshawar) Division during the absence on leave of Major R. J. Blackham. Major H. G. Walton has been appointed Specialist in Advanced Operative Surgery to the Eighth (Lucknow) Division. Captain D. T. McCarthy has been transferred from the Seventh (Meerut) Division to the Eighth (Lucknow) Division for duty. Captain E. W. Powell has been granted leave of absence home from India

for four months. Captain A. McMunn, at present doing duty in the Dublin District, has been placed under orders for service in South China. Captain L. F. F. Winslow, from Pontefract, has joined for duty at Lichfield. Captain D. P. Johnstone has been transferred from Seaforth to Liverpool. Captain A. D. O'Carroll, from the Ambala Station Hospital, Sirhind District, Northern India, has been appointed to the Military Hospital at Aden. Captain J. B. Hanafin has been posted to Dehra Dun from Attock. Captain J. E. Hoar, on return from a tour of service in India, has been appointed to the Belfast District. Captain B. Johnson, from Wellington, Madras Presidency, has taken up duty at St. Thomas's Mount. Lieutenant F. H. Somers-Gardner, from Cosham, has joined at Gibraltar. Lieutenant T. H. Dickson, from the Dublin District, has been placed in Medical Charge of the Troops at Birr. Lieutenant R. C. Priest, at present serving at Colchester, has been placed under orders for a tour of service in India. Lieutenant D. E. C. Pottinger, from Glencoe, has taken up duty at the Station Hospital, Lucknow.

Lieutenant-Colonel Henry L. E. White is placed on retired pay (dated July 3rd, 1911).

INDIAN MEDICAL SERVICE.

The King has approved of the promotion of Colonel Aylmer Martin Crofts, C.I.E., to Surgeon-General (dated April 7th, 1911).

Lieutenant-Colonel B. B. Grayfoot has been appointed to officiate as Deputy Sanitary Commissioner for the Sind Registration District by H.E. the Governor of Bombay in Council, during the absence on deputation of Captain W. O'S. Murphy. The services of Lieutenant-Colonel F. Crimmin, C.I.E., V.C., have been placed by the Home Department of the Government of India at the disposal of H.E. the Commander-in-Chief. Lieutenant-Colonel D. T. Lane has relinquished charge of the duties of superintendent of the District Jail at Sialkot. Lieutenant-Colonel W. W. White has arrived home on leave of absence from India. Major T. H. Delany, civil surgeon at Shahabad, has been appointed Civil Surgeon at Saran, in succession to Major A. Gwyther, appointed to Howrah. Major H. Bennet has been appointed Civil Surgeon at Dharwar, in succession to Lieutenant-Colonel C. T. Hudson, who has obtained leave of absence. Major L. T. R. Hutchinson has been appointed to officiate as Professor of Pathology and Curator of the Pathological Museum at the Grant Medical College, Bombay. Captain E. C. Hodgson has been confirmed in his appointment as Medical Officer of Health, Simla, by the Home Department. Captain H. M. H. Melhuish, district plague medical officer at Amritsar, has been appointed in charge of plague preventive measures in the Delhi district. The services of Captain W. J. Fraser have been placed at the disposal of H.E. the Commander-in-Chief by the Home Department. Captain E. O. Thurston, Bengal Presidency, has received an extension of his leave of absence from India by the Secretary of State. Captain C. M. Goodbody has been appointed Civil Surgeon at Bikaner by the Foreign Department. Captain G. A. Jolly has been placed on temporary duty in the United Provinces of Oudh and Rohilkhand. Captain F. W. Cragg, on completion of his leave of absence home, has embarked for duty in the Madras Presidency. Captain V. B. Green Armytage has been appointed for duty in the Province of Eastern Bengal and Assam. Captain F. O. D. Fawcett has been granted six months' leave of absence home from India on medical certificate. Lieutenant F. F. S. Smith has been appointed Specialist in Ophthalmology to the Second (Rawalpindi) Division.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st Highland Field Ambulance, Royal Army Medical Corps: Alfred John Williamson to be Lieutenant (dated April 21st, 1911).

3rd Home Counties Field Ambulance, Royal Army Medical Corps: James Barkley (late Lieutenant, Royal Army Medical Corps) to be Lieutenant (dated April 8th, 1911).

3rd Northern General Hospital, Royal Army Medical Corps: Captain Stanley Riseley to be Major (dated Jan. 3rd, 1911).

For Attachment to Units other than Medical Units.—Lieutenant Frederick William Kerr Tough, from the 1st West Lancashire Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated March 8th, 1911). Robert Wilfred Simpson to be Lieutenant (dated March 28th, 1911).

2nd Wessex Field Ambulance, Royal Army Medical Corps: Lieutenant Robert Burnet, from the 3rd East Lancashire Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated May 10th, 1911).

1st Northern General Hospital, Royal Army Medical Corps: Frederick George Armstrong, late Lieutenant, 1st Northumbrian Field Ambulance, Royal Army Medical Corps, to be Captain (dated May 12th, 1911).

3rd Western General Hospital, Royal Army Medical Corps: Surgeon-Captain Francis Griffith Thomas, from the 1st Welsh (Howitzer) Brigade, Royal Field Artillery, to be Captain, whose services will be available on mobilisation (dated July 5th, 1911).

For Attachment to Units other than Medical Units.—Percy Reginald Bolus to be Lieutenant (dated June 1st, 1911).

THE CARE OF THE WOUNDED IN A NAVAL ACTION.

What guiding principle will best direct the work of a medical officer in a naval battle? That is the question considered by a writer in the *Marine Rundschau* for June, commenting on a previous article (see THE LANCET, April 8th, p. 966), which detailed a well-thought-out plan for the satisfactory treatment of the wounded in an action on the lines that armies have found best. Here it is urged that that plan is too elaborate, requires too many assistants, and is founded on a misconception of the main duty of a medical officer in action. The conditions on board a ship differ so widely from those on a battlefield that similar measures can hardly be applied. In a ship men of all classes are intermingled, and in the same group of wounded not only must it be noted that some are lightly, some seriously, wounded, but that the loss of some of these means little to the efficiency of the ship, while the loss of others in responsible skilled positions is of grave importance, and these men the medical officer must at once treat if it is at all possible to get them back to their work, even if others more seriously injured have for the time to go unrelieved. In a sea-fight there are no reserves. A turret gun-layer or an important petty officer cannot be replaced if injured, but if he cannot be treated forthwith his training is lost to the ship for the rest of the fight. The case of an admiral wounded will occur to everyone. The medical officer must attend to him at once, and that on the spot where he was wounded, so that if he can be patched up at all the battle may not be lost for want of his directing hand. The principle, says the author, probably a layman, the guiding principle for the medical officer, as for every other officer and man on board, is to do all he can to help the ship to come out of action victorious. Interpreted for the medical officer, that means that it is the men who can be got back to their duty who are to be his first care, particularly those with great responsibilities and usefulness in the ship. This aim he must not allow to be clouded by his humane and professional instinct to devote himself especially to the most seriously wounded. By sending those others to duty, and so increasing the ship's power of damaging her enemies, he will be doing his best to ensure for the seriously wounded a more probable return to harbour and the benefits of hospital treatment by and by.

DEATHS IN THE SERVICES.

Brigade-Surgeon Thomas Edwin Burton Brown (Bengal Army, retired), C.I.E., late principal and professor of medicine at the Lahore Medical College, and chemical examiner in the Punjab, on June 28th, at his residence in Brondesbury, at the age of 78. He joined the Indian Medical Service in 1860, and retired in 1889, when he became medical tutor at the Ayherst Hostel, Cambridge.

LONDON HOSPITAL.—His Excellency the Hon. Whitelaw Reid will distribute the prizes to the students of the London Hospital in the library of the Medical College on Thursday next, July 13th, at 3 P.M.—The annual dinner for old students of the hospital, a function which has been increasingly popular during the past few years, will be held on Oct. 3rd at the Hotel Cecil, W.C. The chairman will be Mr. Douro Hoare. The secretaries are Dr. Lewis A. Smith and Mr. Frank S. Kidd.

Correspondence.

"Audi alteram partem."

THE NATIONAL INSURANCE BILL.

To the Editor of THE LANCET.

SIR,—Your weighty but, from my point of view, much too moderate an expression of the views relative to National Insurance will, I trust, lead to the rejection of the principles upon which the Chancellor has based his Bill.

An enigma it certainly is, that so astute a politician should have introduced a Bill without the sanction of one of the most important of the parties concerned. There can be no doubt as to the objection of the members of our profession to contract practice, which was undertaken from motives of philanthropy in the first place and which has been forced upon us of late years as as objectionable necessity. The spirit of the age is one of compromise; the spirit of the medical profession has for many years past always been such. In connexion with the present legislative action valuable time has been wasted by the British Medical Association. The managers of this society accepted the principle upon which the legislation is based, and in so doing have jeopardised the cause. There appears to be little use in haggling over the details of a crazy structure, but there appears to be a great opportunity in fighting for the great principles which you in your leading article enunciate. The principle, which Sir Alfred Pearce Gould recently advocated, of payment for work performed is the right one for which to fight.

I have referred to our objections to contract practice. There is no doubt that the Bill rivets the shackles of it irrevocably upon our shoulders, however much its details may be varied. It is a matter of certainty that now is the time to fight for a principle, and if the opportunity is lost no recurrence can ever be expected. May I suggest that your efforts should be directed towards the formation of an effective fighting force; compromise must be thrown overboard. I am, Sir, yours faithfully,

Hatfield, Herts, June 30th, 1911. LOVELL DRAGE.

To the Editor of THE LANCET.

SIR,—It is within my knowledge that certain members of the medical profession are inclined to sympathise with Socialism and to regard with approval the Socialist proposals for the nationalisation of the medical profession. I think these gentlemen get their ideas of Socialism from a comparatively small section of the Socialist movement, consisting mainly of members of the Fabian Society and of the Church Socialist League—people who do not really represent in the least the sentiments of the great body of Socialists. It may interest some of your readers to see what a prominent Socialist, really representative of the Socialism of the masses—Mr. Ben Tillett—has to say with regard to the medical profession in relation to the State Insurance Bill. These comments show the bitter class prejudice which Socialist agitators foster among those who would be masters of the learned professions if a system of nationalisation were ever established. I am, Sir, yours faithfully,

Hammersmith, June 28th, 1911. WILLIAM BULL.

[ENCLOSURE.]

Extracts from a signed article by Mr. Ben Tillett appearing in *Justice* on Saturday, June 11th, 1911:—

I should sum up the dangers from the standpoint of the workers to be the dominance of the doctors, who in practice have been greedier extortionists than the worst of the grabbing lawyers so far as the Compensation Act is concerned. There should be a check on the doctors, and their malpractices should be punishable under similar conditions as the restrictions imposed by the Incorporated Law Society. This failing, the Board of Trade or Home Office should have power to withdraw the right to practise from those doctors who abuse their powers.

We should find some malingering under the Insurance Bill of the employers, insurance companies, doctors, and lawyers.

The "Won't Works" among the four groups of persons I have named from the standpoint of conscientious duty are many more than are the poor, wretched, half-starved creatures who may be termed "malingerers" by the sleek crowd of harpies and slugs of the social system. .....

The doctor class are making a sordid fuss over the present measure, but they have had the gain of the public charities, and have had victims to experiment on. They will have to be put in their place, and not to be the professional harpies as well as the licensed slaughterers of the human race. The maternity benefits are too small, and will merely pay the doctor's bill. .....

Already the gang of thieves in the shape of insurance touts, medical extortionists, employers' leagues and federations are "on the make." It is to be hoped the Labour Party will not be bullied or coaxed to relinquish a single benefit for the capitalists and their servants.

To the Editor of THE LANCET.

SIR,—I have received from the British Medical Association a form of pledge with regard to service under the Insurance Act. How can men be expected to pledge themselves when they know nothing of the conditions of service they will be offered? The Association should, I think, wait till at any rate the Bill is through Committee before talking about pledges. On these grounds I have declined to sign.

So far as one can see at present, the Bill will pass substantially in its present form. What will follow? Appointments on a contract basis (we may dismiss measured rate systems as too absurd for consideration—*vide* Dr. Pye-Smith's letter) will be offered by the larger Friendly Societies or by groupings of the smaller societies, or we may succeed in the Committee stage in getting this department of the Bill transferred to the local insurance committees. These appointments will be paid at a rate between 6*s.* and 8*s.* 6*d.* per annum. The men who have signed this pledge will, if they are men of honour, refuse to accept any such appointment. But the same considerations that have induced men to accept clubs at 2*s.* 6*d.*, and moreover to keep them when they have got established in practice—namely, the knowledge that if they did not take them someone else would—will force them to take these new appointments. In my own case—an industrial district with a population of about 3000 and no opposition of consequence—the appointment at 8*s.* 6*d.* would be worth £400 per annum. Is it possible to suppose that an appointment yielding a certain £400, with also the certainty of some private practice, would not soon be taken up? Think of the numbers of men working as locums and assistants, laboriously getting together a little capital before making their plunge into practice on their own account, think how they would jump at such an offer. And where should I be? I should see half my income gone at one stroke and the remainder following it in a year or two.

I ask, What can we do in anticipation of this catastrophe? There must be many thousands of doctors exactly in my position, each one considering how hard he will be hit by the new conditions, and whether he can afford to stand out or whether he must bend to the storm. To enable us to stand firm we must be assured that we shall not lose by it; we must know that if our practices are the ones to be split asunder by "blacklegs" we shall have the support, not merely the moral support but the financial support, of our fellows; in fact, we must establish a substantial fund to guarantee men against loss. Failing this, we shall be jockeyed out of our position by the various forces opposed to us. I am prepared to pay £5 5*s.* if 1000 other medical men will do the same for the expenses of a preliminary investigation into the feasibility of such a scheme. We should want a canvass of the whole Register; in many cases a personal canvass would be needed to ascertain the precise views of every man on the subject and what he would be likely to lose or gain under the Bill; and thus we could get some idea what amount of financial backing our fight would need. My idea is that if it were known that we had collected £20,000 to boycott the Bill we should hear very little further of it. I enclose my card, but for obvious reasons I do not wish my name and address published at present.

I am, Sir, yours faithfully,

July 1st, 1911. M.B. LOND.

INSTRUCTION OF SCHOOL CHILDREN IN HYGIENE.

To the Editor of THE LANCET.

SIR,—The executive councils of the National League for Physical Education and Improvement and of the National Health Society have had under their consideration Dr. Addison's Bill, which provides for instruction in hygiene and in the care of infants, and they have authorised us to express their earnest hope that the Bill may be allowed to become law.

If the health of the people is a great national asset provision for the due care of that health is an act of national

insurance. To neglect the conditions which secure health is perilous, but the neglect which is so prevalent is due, not to heartlessness, but to ignorance. Due instruction therefore in the laws of health should not be a casual subject, but a necessary subject of education in our schools.

It is therefore in our judgment fitting that, to quote the terms of the Bill: "Each local education authority shall arrange, as hereinafter provided, that during each school term simple instruction in hygiene and the care of health, suitable to the age and understanding of the children, shall be given to all children attending public elementary schools, and, in particular, shall arrange that each girl of the age of 12 years or more shall be adequately instructed in the care and feeding of infants."

We therefore cordially welcome Dr. Addison's Bill and trust that it may receive the unhesitating support of all who desire national well-being.

Signed on behalf of the executive councils of the above societies,

W. B. RIPON.	HENRY KENWOOD.
LAUDER BRUNTON.	F. N. KAY MENZIES.
JOHN TWEEDY.	A. WELLESLEY HARRIS.
MARY SCHARLIEB.	F. LANKESTER.

Tavistock-square, London, W.C., June 28th, 1911.

SALVARSAN ("606") AND MERCURY IN THE TREATMENT OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—On previous occasions we have felt it incumbent upon us to reply to communications in your columns and elsewhere from the pen of Major H. C. French. Hitherto our difference of opinion has centred in what we regard as the unreasonable antipathy of Major French to the intramuscular injection of insoluble salts of mercury in the treatment of syphilis. We may say that since April 1st, when we observed a note from his pen in the *British Medical Journal*, chronicling at second-hand a death at Cairo, we have expected to see an article by him containing all the evidence that can be collected against salvarsan. In your issue of June 24th, p. 1691, our patient anticipation was rewarded.

It is not our intention to deal exhaustively with Major French's long and discursive criticism, but we feel we must take exception to a few of his statements. Like other opponents of salvarsan, he has something to say about the commercial aspects of the matter, but this by the way. His statement that the remedy was placed on the English market shortly after August, 1910, at which date "under 1000" cases had been treated by it, is grossly inaccurate. Salvarsan was not placed on the English market till after Dec. 8th, 1910, upon which date Professor Ehrlich delivered an address in Frankfort, and summed up the results obtained from the many thousand injections which had been administered during the preceding 10 or 11 months.

We have rarely come across a more egregious example of *suggestio falsi* than is contained in the following sentences: "I have previously emphasised the fact that atoxyl used in the treatment of sleeping sickness caused total blindness in 54 and partial blindness in 136 cases. Soamin and arsacetin ..... have also caused epileptiform seizures, atrophy of the optic nerve, and blindness in treating syphilis. I am not aware, however, of any fatal results as is the case with salvarsan." Now, these sentences are calculated to produce an impression upon the minds of the uninitiated that in addition to producing fatal results salvarsan is responsible for many cases of blindness. That such an idea is absolutely without foundation anyone who has studied the literature knows. The opponents of salvarsan write as though optic neuritis and optic atrophy did not occur in the course of ordinary cases of syphilis. During the last few months we have seen two cases of optic atrophy and one of optic neuritis, which had been treated throughout with mercury. If these cases had received an injection of salvarsan what a hue-and-cry their publication would have caused among the opponents of Ehrlich's remedy. As for disturbance of the sense of hearing, it is a common symptom of syphilis even when no arsenic has been exhibited. The question of fatalities is one of extreme importance, and with much effort Major French has collected 31 cases, 14 in infants and 17 in adults. Our study of the literature has led us to the opinion that some of the infants would have died in any case, whatever remedy had been employed. We do not regard the remedy as a suitable one for direct administration to young children. As for the fatalities in adults, some of them were due to errors in judgment in the choice of cases and others to a faulty technique.

If Ehrlich's careful instructions not to use the remedy in cases of degeneration of the circulatory system and brain syphilis had been followed, some of these deaths would have been avoided. It is very hard on any remedy, and on its discoverer, that it should be made the scapegoat for the errors of its administrators. One more statement we must take exception to, and that is that "syphilis, unlike cancer, sleeping-sickness, and kala-azar, is not a fatal disease." We wonder in what fool's paradise Major French has been living. Judged, of course, by the Registrar-General's returns, syphilis is not a fatal disease, for many a death directly due to it is certified euphemistically by another name. But surely Major French knows of the long series of life-destroying sequelæ that follow close in the footsteps of syphilis. It is because we regard syphilis as a most formidable disease that we advocate the administration of such a powerful remedy as salvarsan.

If Major French will for a few months make a careful use of it in suitable cases of syphilis we are confident he will be well pleased with the results, and will regret having written such an alarmist article, and one so calculated to create prejudice in the minds of those who, like himself, have had no personal experience of salvarsan.

We are, Sir, yours faithfully,

G. STOPFORD-TAYLOR.
June 26th, 1911. R. W. MACKENNA.

To the Editor of THE LANCET.

SIR,—THE LANCET of June 24th contained a paper on the above subject by Major H. C. French, R.A.M.C. In my opinion his conclusions are erroneous, and appear to be based on a very small personal experience and an inaccurate interpretation of second-hand evidence.

In the first paragraph he states that "the drug apparently acts very much in the same manner that iodide of potassium does, and in early syphilis is not an actual curative agent." It has, however, been frequently shown that potassium iodide has little or no action on the Wassermann reaction on the treponema pallidum, whereas salvarsan produces a negative Wassermann in a large percentage of cases[1] and causes a very rapid disappearance of the treponema pallidum. On what practical experience does Major French base his opinion that "injections of salvarsan are not of greater value than administration of arsenic by the mouth"?

In the fourth paragraph Major French writes: "Up to August, 1910, there were under 1000 cases treated (by salvarsan), and it was placed on the English market very shortly afterwards." The foundation for this statement is based on an extract from an article by Bohac and Sobotta which was reproduced in Bresler's book in which these authors state that they have not found records of some effects that they have related "in the 1000 or more cases *published*." Now Ehrlich definitely states in "Die experimentelle Chemotherapie der Spirillosen" (p. 139), which was written before Oct. 5th, 1910: "I have before me the reports on over 9000 cases treated with salvarsan," and the drug was not placed on the the market till more than two months after this statement was written. Major French then calls to his aid the "31 deaths within a year"—a ghost which has been laid for many months and which might, I think, be permitted to rest in its dishonoured grave. Most of the cases quoted by Major French are discussed in the review of the subject by A. Manuel and myself.[2] In most of the few fatal cases either the technique was faulty or the contra indications were not observed. Some were desperate cases in which death occurred in spite of and not because of salvarsan.

Major French complains that Gibbard and Harrison were vague as to the period that elapsed between the injection of salvarsan and the disappearance of lesions in their cases. These authors reported the average length of time for disappearance of symptoms in 97 cases of primary or secondary syphilis, besides referring to 33 cases intractable or intolerant to mercury in which salvarsan produced a rapid change for the better. On carefully reading through their paper[3] it

[1] Manuel and Bayly: Practitioner, June, 1911.
[2] Ibid.
[3] Gibbard and Harrison: THE LANCET, March 18th, 1911.

will be seen that practically all their cases are accounted for, and I am therefore at a loss to understand what Major French has to complain of in their valuable contribution.

Regarding Major French's remarks on the injection of 0·2 grm. at fortnightly intervals, entailing a stay in hospital for six weeks, the paper in question gives no authority for his deduction that the patients remained in hospital during the whole of their treatment. I have since inquired on this point of the officers concerned, and find, in fact, that the detention in hospital was for only 24 hours after each of these small doses. Major French infers that Gibbard and Harrison confused the diagnosis by local treatment of the sores, but these officers state[4]: "In all cases of primary sore T. pallida were found in great numbers previously." I have been unable to find any justification for the statement that Gibbard and Harrison "claim 90 per cent. cures." On the contrary, these officers merely stated the number of relapses up to date and refrained from any comment.

As regards the "ocular casualties" and "labyrinthine disturbances" mentioned by Major French, Ehrlich categorically states[5] that no case of blindness has been reported to him, and that, despite penetrating research, it has not been possible for him to run one of these rumoured cases to earth. Professor Neisser in the Cavendish lecture (June 26th) stated that in his opinion the rare auditory symptoms were due to the disease and not to salvarsan.

It is impossible in a short letter to fully criticise Major French's paper or to reply in detail to all his arguments and conclusions. Dr. Alexander Manuel and myself have reviewed the matter at some length in the June number of the *Practitioner*, where I think that answers will be found to most of Major French's arguments. May I here point out that through a printer's error the percentage of fatalities was in the *Practitioner* placed at 2 per cent. instead of 0·2 per cent.? I cannot see the force of Major French's references to atoxyl, soamin, &c., in connexion with this subject, as these preparations differ as essentially from salvarsan as chloral does from chloroform.

Will Major French produce evidence that half a dozen workers have definitely abandoned the routine use of salvarsan after intravenous administration in 100 cases? I am still waiting for definite opposition to salvarsan based on practical experience of its use in a considerable number of cases. So far the English critics of salvarsan (Mr. Ernest Lane, Dr. C. F. Marshall, and Major French) appear to have relied either on very slight experience of the intramuscular method or on the careful gleanings from the reports of the few opponents and the remarkably small casualty list. As time passes even this very short list of casualties and serious after-effects is rapidly becoming proportionally less and less, and Professor Neisser is convinced that salvarsan should be given as a routine treatment in every case of syphilis and parasyphilis that does not present well-marked contra-indications. He considers salvarsan less harmful and dangerous than a prolonged course of mercury. Major French's conclusions, therefore, that salvarsan "is far inferior to mercury" and that "it is quite unjustifiable to use salvarsan in place of the judicious use of mercury in average cases of syphilis" appear to have been arrived at on insufficient data, and are not borne out by the large mass of evidence now at our disposal.

I am, Sir, yours faithfully,

HUGH WANSEY BAYLY,
Pathologist to the London Lock Hospitals, &c.

To the Editor of THE LANCET.

SIR,—Referring to the paper by Major H. C. French, R.A.M.C., entitled, "Salvarsan ('606') and Mercury in the Treatment of Syphilis," which appeared in THE LANCET on June 24th last, we wish to correct an inaccuracy appearing on p. 1691—viz., "I understand that it was originally stated that 'salvarsan' would not be placed on the market until 20,000 cases had been treated by it. Up to August, 1910, there were under 1000, and it was placed on the English market very shortly afterwards."

The true facts of the case are as follows: "Salvarsan" was only placed on the market generally (not only on the English market) on Dec. 15th, 1910, by the Farbwerke vorm. Meister, Lucius, and Brüning, Hoechst-on-Main, Germany, after 60,000 doses had been supplied free of charge for testing purposes, with which about 40,000 cases were treated.

We beg to add that we have the authority of his Excellency Professor Dr. Paul Ehrlich for making the above statement, and remain, Sir, Yours faithfully,

PRO MEISTER, LUCIUS, AND BRÜNING, Limited,
St. Mary Axe, London, July 5th, 1911. ERNEST SCHOLL.

[4] Ibid., p. 729.
[5] Ehrlich and Hata: Chemotherapy, 1910.

BRIGHTON SCHOOL CLINIC: THE ACTION OF THE HOSPITALS IN RESPECT OF DENTISTRY.

To the Editor of THE LANCET.

SIR,—In your annotation on the Brighton School Clinic on June 24th you remark on the subscriptions to hospitals for the purpose of obtaining letters to be given by the school doctor to school children requiring medical or surgical treatment. The honorary medical officers of all the hospitals have objected to this course, and the boards of management have all passed the following resolution:—

That after the year 1911 the hospitals shall, except in special cases, decline to treat school children attending the primary schools of the Brighton and Hove education authorities, and found, on medical inspection by the medical officers of the said authorities, to be suffering from otorrhœa, enlarged tonsils, adenoids, errors of refraction, skin diseases, or defective teeth.

The Brighton education authority will thus have to arrange to have these cases dealt with in future without making use of charitable institutions. It is hoped that the honorary medical officers of hospitals in London and other towns will also refuse to do the Government's work for nothing.

I am, Sir, yours faithfully,

WALTER BROADBENT, M.D. Cantab., M.R.C.P. Lond.
Brighton, June 29th, 1911.

CYCLIC VOMITING.

To the Editor of THE LANCET.

SIR,—I am greatly interested in Dr. Edward Mellanby's very illuminating article on this subject which you publish in your last issue under the title "A Short Chemical Study of a Case of Cyclic Vomiting, with Some Remarks on Creatinuria and Acidosis." It deals with matters of considerable importance and beyond the scope of this communication, but there are one or two points which may well be commented upon at this stage. I think Dr. Mellanby is mistaken in believing that the general trend of opinion is in favour of ascribing to acid intoxication the symptoms which characterise cyclic vomiting, and, one may add, post-anæsthetic vomiting, the pernicious vomiting of pregnancy, and the other members of this closely allied morbid group. In recent years this view has been opposed in many articles and discussions. Rochford in 1904 attributed cyclic vomiting to an auto-intoxication due to incompetence of the liver, and strongly expressed his opinion that the presence of acetone, diacetic acid, and β-oxybutyric acid was in no way connected with its etiology. Leonard Guthrie at the Sheffield meeting of the British Medical Association in 1908, and again in discussion on a case shown before the Royal Society of Medicine in March, 1911, was of opinion that the symptoms of this condition could not be attributed entirely to acid intoxication, and Bainbridge, in the discussion which followed Guthrie's paper at the British Medical Association's meeting, pointed out that there was no proof available to show that acid intoxication was concerned in the production of any condition ascribed to it except diabetic coma. Hunter, in his article on delayed chloroform poisoning in Allbutt and Rolleston's "System of Medicine," also states his belief that the toxæmia in these conditions is due to something more than the products of fat katabolism. These are only a few examples from the recent literature on the subject, and I think they show that there is an increasing tendency to disparage the importance of acid intoxication as a cause of cyclic vomiting and allied conditions. Dr. Mellanby does me the honour of quoting my suggestion that the alimentary canal may be the source of a toxin or toxins which cripple the liver, weakening its powers of dealing with fats and so producing an acid intoxication. His article certainly helps to strengthen the first part of this hypothesis—namely, that the alimentary canal is the source

of the toxin or toxins. With regard to the second part, which ascribes to acid intoxication the symptoms of the condition, I should like to take this opportunity to say that I have long thought it untenable, and am quite prepared to accept the conclusion which Dr. Mellanby has arrived at as the result of his investigation, that cyclic vomiting is in no sense an acid intoxication. The presence of the acetone series in the urine is no more than a somewhat unreliable indication of a more profound lapse from metabolic rectitude in which the liver plays the chief part.

Even in diabetic coma it is quite legitimate to doubt the importance of the acidosis, since diabetic patients will gradually sink into coma and die, even when enough alkali has been administered previously to render the urine strongly alkaline for several days before death, and experimental injection of each of the known bodies of the acetone series fails to reproduce the symptom-complex known as diabetic coma.

I am, Sir, yours faithfully,

Queen Anne-street, July 3rd, 1911. FREDERICK LANGMEAD.

THE DECLINING BIRTH-RATE.

To the Editor of THE LANCET.

SIR,—In Mr. F. E. Fremantle's Edward Jenner lecture on "The Declining Birth-rate," published in THE LANCET of April 22nd, we read (p. 1061): "The chief factors, then, in the decline of the birth-rate are mechanical and logical. The mechanical factors just named are in reality only methods. It is the following logical factors that are the ultimate cause." Mr. Fremantle then gives as the logical factors (though what he quite means to connote by "logical" is not very obvious) three conditions of married life which may be shortly summarised as: 1. Child-bearing at long intervals in the interests of health. 2. The interferences to child-bearing caused by social or conjugal obligations. 3. The desire for economy.

Surely, to any honest and impartial student of the present-day conditions of married life the most potent cause of the decline in the birth-rate of Great Britain, except perhaps among the very rich and the very poor, is *compulsory barrenness*. If Mr. Fremantle will pardon me for saying so, I think he might have made his lecture more illuminating and no whit less scientific if he had first read and considered the remarkable preface to Mr. George Bernard Shaw's play *Getting Married*. Therein he would have had the opportunity of learning the indubitable fact that the class of women from whom the nation has perhaps most to expect—i.e., that class generally termed the "middle classes"—is from a variety of causes, all of which are fully discussed by Mr. Shaw in his inimitable style, opposed to the law which involves "the saddling of the right to a child with the obligation to become the servant of a man."

The medical profession can do all that Mr. Fremantle suggests, but until the medical profession throws its influence on the side of those who are striving to attract public attention to the lamentable state of the English marriage and divorce laws very little hope can be reasonably entertained that the fall in the birth-rate in the British Isles is going to stop. Mr. Fremantle also advocates that all aids to the prevention of conception "should be relentlessly pursued and checked by the law." Does he propose that a married couple should cease from sexual relationship if for any reason, and indeed there are many, conception should be highly undesirable? If Mr. Fremantle does propose that, and it is difficult to construe any other meaning to his remark, does he reflect on all that is almost sure to follow upon such procedure? It is inconceivable that he should not have come across many cases of chronic mental disorder which are directly attributable to sexual repression, especially so in married persons separated from each other either through the rough calls of duty or business, as well as among men or women who have recently lost either wife or husband.

Further, I venture to believe that Mr. Fremantle greatly overrates the disorders which are indubitably referable to the prevention of conception; the production of abortion is another thing altogether, and no doubt under this heading many disorders can be enumerated. An absolutely impartial investigation of data on the dangers attributable to the prevention of conception would lead one to suppose that there is only one serious disorder to be feared from the practice of preventing conception—i.e., hysteria in certain forms.

In conclusion, I would venture to assert that the propagation of a sound systematic instruction in sexual hygiene, coupled with a thorough revision of the laws connected with marriage and divorce, will do more to correct the decline in our birth-rate than any of the suggestions put forward by Mr. Fremantle in reference to the suppression of the mechanical means of preventing conception or the *modi operandi* of producing abortion.

I am, Sir, yours faithfully,

OWEN A. R. BERKELEY HILL, M.A., M.B., Ch.B. Oxon.

Saugor, Central Provinces, India, May 11th, 1911.

ANÆSTHETICS IN INTESTINAL OBSTRUCTION: THE VALUE OF GASTRIC LAVAGE.

To the Editor of THE LANCET.

SIR,—The possibility of immediate or gradual suffocation or of ensuing broncho-pneumonia in these cases is well known, but I have some reason to think the extent of the danger is not always realised. Unless special measures are taken there is this dilemma—that under a light anæsthesia rigidity and straining make the operation prolonged and difficult, and tongue retraction and laryngeal spasm entail asphyxia and cardiac dilatation; whilst under a deep one ejection of the stomach contents may still go on, and as cough reflex is abolished the patient is likely quietly to be drowned.

It is, of course, necessary for the anæsthetist to be very watchful, and it is the usual practice to keep the head low and on one side, with the opposite shoulder raised, the mouth open, and sponges ready. As Mr. Colt in his letter in your columns on June 17th also mentions tongue forceps, I would point out that it is a common and disastrous mistake of nurses and others to push the lower jaw forwards or pull out the tongue whilst a patient is in the act of vomiting. By so doing the natural closure of the larynx is interfered with and the risk of inhalation of fluid increased. This should not be done until ejection has ceased and after clearing the pharynx. If breathing should be dangerously arrested during ejection it would, I believe, be safer to perform laryngotomy. It would certainly be hazardous to leave a deeply anæsthetised patient in charge of a nurse under such circumstances. If the Trendelenburg position be adopted during operation fluid is apt to run down continuously, forming a pool in the pharynx, which cannot be kept clear even by frequent sponging.

Preliminary lavage of the stomach, as remarked by Mr. Colt, often proves a failure, but I can hardly agree that if properly done it is a severe strain on the patient and causes much pharyngeal irritation. This should at least be carried out, even when vomiting has not been a marked symptom. I have recently drawn attention[1] to the importance of doing so, at any rate when the operation has been concluded. Sometimes a stomach-tube may be left in and connected to a long tube for syphonage, but it may interfere with respiration or fluid may well up around it, so there is no complete security against inhalation.

In a paper contributed to one of your contemporaries in 1908 I suggested the advisability of preliminary laryngotomy or tracheotomy to obviate these difficulties, and Dr. Dudley Buxton[2] has described the method at length and urged its employment. Laryngotomy can be done very quickly under local or light anæsthesia; it should cause little bleeding and no shock; the wound should heal in a few hours. The pharynx and upper larynx are cocainised and well packed with gauze all round the stomach-tube.

There are no further difficulties and dangers in regard to the respiration or the anæsthetisation, and the operator is not hurried and disturbed. In short, the advantages of the proceeding are as great as in such operations as removal of the tongue, and I trust it may be more generally adopted than is the case at present.

I am, Sir, yours faithfully,

Chelsea, S.W., June 19th, 1911. J. D. MORTIMER.

[1] THE LANCET, June 17th, 1911.
[2] Brit. Med. Jour., April 23rd, 1910.

THE EYESIGHT OF SAMUEL PEPYS.

To the Editor of THE LANCET.

SIR,—I have read with interest the address of Mr. D'Arcy Power to the Samuel Pepys Club. As a literary achievement it shows both industry and ingenuity, but the arriving at a definite prescription for Samuel Pepys, Esq., seems to suggest that the modern quack method of "diagnosis and treatment by correspondence" need no longer be viewed with professional disfavour. The ease with which a specialist, on hearing Pepys' symptoms, at once prescribed "+2 D. or +2·5 D. convex glasses" is very striking, as is also the facility with which Mr. Power himself added +0·50 cylinders axis 90°. Of course, Samuel Pepys cannot try these spectacles, and there is therefore no means of bringing home to the prescribers any possible error arising out of the "correspondence" method, but the whole episode casts a somewhat lurid light on the specialist and his work. I am not well enough versed in optics to criticise the theoretical accuracy of the prescription, but it would really be interesting to know on what grounds the "axis 90°" was arrived at in the unavoidable absence of the patient; it seems "uncanny," if it is not a little joke.

I note that Mr. Turlington advised Pepys against using "reading glasses which do magnify much," and that Mr. Power characterises this advice as "superlatively bad, for he was clearly recommending Pepys to use concave glasses when in reality he needed convex ones." On the face of it this is not so clear. I understand that concave glasses do not magnify at all, but rather diminish the size of an object. There is surely significance in Turlington's word "much," and it might be more fair to interpret his advice as a wise recommendation to use the lowest convex glasses that the patient could read with, rather than indulge in the luxury of much magnification. The literal terms of the advice can hardly be said to suggest concave glasses.

Incidentally, it does seem a pity, as Mr. Power suggests, that Mr. Pepys did not "sit upon his tubes and crush them," seeing that a revolution of the laws of dioptrics was so imminent, and depended with a fair amount of certainty on such a likely accident. It looks as if Providence had missed a splendid opportunity.

I am, Sir, yours faithfully,

Liverpool, June 22nd, 1911. A. ROSS CARMICHAEL.

EMOLUMENTS IN THE INDIAN MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—In your annotation in THE LANCET of May 13th with reference to "M.B.'s" letter *re* the Indian Medical Service you rightly state that it is Lord Morley's disastrous suggestion to cut down the civil appointments at present held by the Indian Medical Service that has so harmed the service, but at the same time you seriously underestimate the bad pecuniary emoluments of the Indian Medical Service. As an example of the small opinion the Indian Government have of the worth of their medical men, the Royal Engineers at home draw less pay than officers of the Royal Army Medical Corps of corresponding ranks at home. In India the reverse is the case, and not only this, but the R.E. officer draws more than an I.M.S. officer of corresponding rank. You must remember that an R.E. gets his professional education at Government expense. An officer of the Royal Army Medical Corps draws actually *less* pay in India than while serving at home (officers of the Indian Medical Service draw slightly more pay than the Royal Army Medical Corps). Eighteen months ago the pay of the Indian army officers was raised and not the Indian Medical Service, so that now these officers draw practically the same pay as the Indian Medical Service in spite of not having had the previous long expensive education a doctor has to undergo.

When an R.E. officer goes into civil, he draws considerably more pay than in military employ. An I.M.S. officer, on the other hand, draws 50 rupees less. For many years a civil surgeon will make practically nothing in private fees. Also, there is such a block in civil now, that one cannot get in under about eight years' service.

Another crying grievance of the Indian Medical Service is that the cadre is kept so small that leave is extremely hard to get. One is entitled to two months' privilege leave every summer, but, as a matter of experience, one is lucky to get it on an average every other year. Leave home, too, is extremely hard to get. Officers who have been serving for over five years find they are unable to get leave owing to the shortage. Then again the number of transfers a junior officer gets is nothing short of a scandal. One constantly hears of junior officers having 12 or 13 transfers in his first three or four years.

I am afraid I have sent rather a long letter. You seemed surprised that "M.B." should state that living has gone up 100 per cent. and the purchasing power of the rupee down 50 per cent., but this is well recognised out here. Polo, shooting, &c., are rapidly becoming the rich man's sport as in England.

I am, Sir, yours faithfully,

May 31st, 1911. I.M.S.

THE BUBONIC PLAGUE IN EGYPT IN 1911.

To the Editor of THE LANCET.

SIR,—The apparent indifference of the authorities and of the public to the ravages of the plague in Egypt is very singular. From the commencement of this year to June there have been more than 1400 cases, compared with some 700 in the corresponding period of 1910. For the week ending June 3rd the returns indicate a slight diminution in the number of cases, perhaps owing to the weather, but the innumerable rats in the villages are probably becoming more universally affected. The provinces which this year have suffered most severely are Assouan, with 491 cases, of which 307 proved fatal; Keneh, 505 cases, 392 fatal; and Assiout, 186, of which 93 terminated fatally. The type in some places is most virulent. Last December a native sanitary officer, despatched to endeavour to combat an outbreak in a village in the Delta, caught the infection the day after his arrival and died within 24 hours. This failure to wage successful warfare against the plague is due to the attempt to try natives in posts previously assigned to Europeans. In the sanitary department in country districts, unless British officials are augmented in number and authority, and thus certain necessary precautions and cleansings enforced upon the fellahin, a recrudescence of the plague, with its attendant misery and injury to the tourist season, is much to be dreaded.

I am, Sir, yours faithfully,

June 24th, 1911. TRAVELLER.

A YEAR'S COST OF RUNNING A MOTOR-CAR LIMOUSINE COMPARED WITH THAT OF A BROUGHAM.

To the Editor of THE LANCET.

SIR,—A year ago I changed my brougham for a motor-car. The brougham, two horses and a coachman, and all other expenses, including all renewals, cost on an average £210 a year. The mileage was estimated at 4000 = 1*s.* 0½*d.* per mile. The carriage was used for the purposes of the practice only, one horse in the morning and the other in the afternoon. The initial cost of a 15 h.p. Daimler Limousine, ready for the road, with spare wheel and all accessories, was £543; the initial cost of brougham, two horses, harness, &c., would be nearly £300. The first year's expenditure on the car, including chauffeur (£90), insurances, rent, rates, petrol, new tyres, and all other expenses, amounted to £201 2*s.* 1*d.*, to which £108 12*s.* 2*d.* must be added for depreciation (i.e., 20 per cent. of initial cost); the total expenses for one year were, therefore, £309 14*s.* 3*d.* The miles run in the year were 5203, of which 1128 were for pleasure and 4075 for professional purposes. The cost of running per mile works out at 1*s.* 2½*d.* Therefore £241 19*s.* may be stated as the cost of the car for one year for the practice as compared with £210 for the brougham. The total petrol used for all purposes was 294 gallons, or 17⅞ miles to the gallon. As 500 miles were run with a defective carburetter which gave only 10 miles to the gallon in the town with frequent stoppings, and only 13 miles in the open country, and as on a holiday 816 miles were run on 35 gallons

(= 23½ miles to the gallon), it is obvious that the mileage per gallon of petrol now will be about 20 in the town, in which the motor runs about 14 miles a day and stops and starts about 30 times.

The tyres on the steering wheels are an expensive item. The four wheels of the car and one spare wheel were fitted with Continental tyres with the following results:—One front wheel plain tyre is still running at 5293 miles; one front wheel plain tyre burst at 5160 miles; one rear wheel studded tyre split at 1851 miles; one rear wheel studded tyre ran only 2565 miles when most of the studs were out and the cover was worn through. Avon tyres were then tried. One rear wheel studded tyre ran only 2245 miles when most of the studs were out; it was then retreaded and put on a front wheel. A rear wheel cross-grooved Avon has run only 1300 miles and is now off for repairs, it having a big cut in it as well as a patch of the canvas exposed. Other tyres of the same makes gave like results. Many of the streets of my town are paved with rough cobble setts, which I think pull out and wear the studs quickly. I am therefore using now plain tyres on the back wheels as well as on the front. Altogether I spent £30 6*s.* 7*d.* on tyres in the twelvemonth.

The only mechanical breakdown in the year was caused by the breaking of a ball race which prevented the use of the car for a day and a half. It occupies the chauffeur two to three hours each day to keep the car smart and in running order. The great advantages of the car are obvious—viz., greater speed, and therefore saving of more time each day for either leisure or study. Ease and comfort in travelling, and also more light in a Limousine. The rapid motion through the air is exhilarating, whilst trundling along in a brougham is somewhat depressing. The car never tires as horses do. Long journeys do not upset the day's work as formerly, since they can be taken in so short a time.

The advantages of a Limousine over a landaulette or open body are: No need to alter one's dress nor to wrap up in cold or wet weather; with the windows down between the body and the chauffeur, no draught, yet more air and more light than in a brougham. All the parts being fixed, they do not rattle loose as in a landaulette, nor does dust blow into the body or on to the occupant. Then there is the pleasure and health derived from touring and the advantages of having a rapid mode of travelling at one's command at any time during the day or night. With a silent Knight engine the absence of vibration and noise is a great advantage to a doctor and his patients. I should say that to a busy man an experienced, steady, and trustworthy chauffeur is a *sine quâ non*.

I am, Sir, yours faithfully.

June 30th, 1911. F.R.C.S. ENG.

MEETING OF CANADIAN MEDICAL ASSOCIATION IN MONTREAL.

(FROM A SPECIAL CORRESPONDENT.)

THE forty-fourth annual meeting of the Canadian Medical Association opened on May 7th. All the sessions were held in the Anatomical Laboratory of the new medical building of McGill University, Montreal, except that the address in medicine was delivered in the gallery of the Art Association.

At the general meeting the President-elect, Dr. GEORGE E. ARMSTRONG, of Montreal, was installed, and addresses of welcome were given by Dr. GUERIN, mayor of Montreal, himself a medical man, and by Dr. PETERSON, Principal of the University. Some business matters were attended to and the report of the Milk Commission of the Canadian Medical Association was read.

On the afternoon of Wednesday the section meetings began. The meetings of the section on Preventive Medicine were especially interesting, and it may be said that a symposium in this section on Typhoid Fever and Water-supplies was a conspicuous success. On Thursday morning a general meeting was again held in the Department of Anatomy, when the address of the President, Dr. G. E. Armstrong, was read. Unfortunately, Dr. Armstrong had had to leave the meeting on the previous day on account of illness, and was not sufficiently recovered to deliver his own address, which was therefore read in his absence by Dr. A. HUTCHINSON, of Montreal.

Presidential Address.

The address was largely concerned with a retrospect of the history of the rise and development of the association in Canada. A portion was devoted to a consideration of the Roddick Bill for Dominion registration, which Dr. Armstrong characterised as the most forward medico-political question before the profession in Canada to-day. He hoped that with the adoption of the Act before long the English-speaking provinces would unite on a uniform standard of matriculation, although Quebec would have to remain outside on account of different educational methods. Referring to the value of research work Dr. Armstrong declared that English researches of a century ago were the profitable milch cows of foreign nations to-day. In discussing the pure water problem Dr. Armstrong stated that in his opinion in such a country as Canada, with its abundant water-supply, it was a reproach to any municipality, great or small, to have water-borne diseases. The housing problem was next dealt with, and it was pointed out how much it had been intensified in Montreal and other cities by the introduction of swarms of immigrants, many with low standards of living and general habits which did not tend to healthy bodies, sound minds, or good citizenship. There ensued slum life and an inevitable degeneration amongst the third and fourth generations of city dwellers, with the result that a large proportion of people became charged upon the State. He therefore urged that the Canadian Medical Association should work to demonstrate to municipalities that money expended in providing the working classes with better houses, wider and better aired and lighted streets, would be infinitely well rewarded in a lesser expenditure for police-courts, prisons, asylums, and hospitals, thus inverting the principle that "The means to do ill deeds makes ill deeds done." Canadians had no excuse for repeating the mistakes of older civilisations and in this way they could best aid the churches and the temperance and moral reformers.

Address in Surgery.

Dr. A. PRIMROSE of Toronto delivered the address in surgery. The speaker said that being a young country something of the spirit of the pioneer settlers had been inherited, and thus Canadian medical men were more ready to develop along lines which might be new and revolutionary in character. The consequence of this adaptability and willingness to learn had been that nowhere was work done in surgery with more general efficiency than could be found in the hospitals of Canada to-day. Dr. Primrose, like Dr. Armstrong and all the principal speakers, both at the McGill celebrations and at the meeting of the Canadian Medical Association, paid heartfelt tribute to the memory of Dr. James Bell of Montreal, who died somewhat suddenly a few weeks ago. His great merits as a surgeon, a man, and a citizen were referred to in fitting terms. Dr. Primrose, while allowing that conservatism in surgery was good, said that pure prejudice often passed as conservatism, and therefore care should be taken that no prejudices were harboured and that conservatism should in no way be allowed to hinder better judgment. The speaker pointed out that in all ages the advance of science had been hampered by prejudice, and that even in these enlightened times prejudice was not dead. The technique of Lister, for example, did not make the headway that was its due, on account of the opposition of some of the distinguished medical contemporaries, and it was a remarkable circumstance that foreign surgeons had been more quickly convinced of the great value of antiseptic treatment than had those of his own country. Dr. Primrose eulogised Lord Lister as the almost perfect type of the logical scientific mind. He urged that medical students should have a prolonged and efficient course of instruction in preliminary science, and opposed the view held by many that such training was unnecessary. Reverting again to the question of conservatism in surgery Dr. Primrose said that although a conservative attitude was to be commended it should be that type of conservatism which was tempered with ability to use calm and deliberate judgment in determining what was best for the patient; and when new light was thrown on some obscure problem medical men should be ready to abandon any erroneous ideas which might hitherto have been held, and be prepared to advance, looking for no finality in present-day methods, but always endeavouring to attain the ideal.

Gall-stone Disease.

A paper on the Surgical Treatment of Gall-stone Disease was contributed by Dr. WILLIAM J. MAYO of Rochester, Minn., U.S.A. Dr. Mayo said that in reviewing 4000 operations performed by him and his brother he had been impressed with the fact that the mortality was due to the complications incident to the disease rather than to the removal of gall-stones from the otherwise normal gall-bladder. It was in the early period that operation furnished an easy, safe, and efficient cure. Cholecystostomy with temporary drainage of the gall-bladder to the surface was the operation preferred, because it saved this valuable organ for future functioning. The danger of re-formation of gall-stones after this operation was exceedingly small. In the class of cases in which the gall-bladder was contracted down upon a mass of stones secondary carcinoma was likely to develop. The danger of carcinoma alone was five times as great as the mortality following operations for the relief of simple gall-stone disease. So long as the stones were confined to the gall-bladder the trouble remained localised in an organ which was not essential to life, but with the entrance of stone and infection into the deep duct of the liver two fundamental organs which were essential to life were liable to be involved in the process—namely, the liver and the pancreas. Stones in the common duct not only impaired the health of the patient, but complications directly threatening life might arise at any time. In the Mayo brothers' 4000 operations the average mortality was 2·75 per cent. In 2920 of these the disease was local and confined to the gall-bladder and cystic duct. The operative mortality was 1·8 per cent. In 2165 of these cystostomy was performed, with a mortality of 1·5 per cent. In 755 cases cystectomy was performed, with a mortality of 2·4 per cent. In 492 cases in which the common duct was involved operation resulted in an average mortality of 8 per cent., a mortality which depended not so much upon the operation itself as upon the extent of involvement of the liver and pancreas, and the bad general condition of the patient. Pancreatitis as a complication occurred 359 times in the 4000 cases.

Address in Medicine.—Work in the Sections.

The address in medicine was delivered by Sir JAMES BARR.

Three symposia were held, one on acute poliomyelitis, one on temperature in the puerperium, and one on typhoid fever and water-supplies. The latter was very interesting and instructive, and its initiation was due to Dr. T. A. STARKEY, professor of hygiene at McGill University, and chairman of the Section of Preventive Medicine. The subject of typhoid fever was discussed from every standpoint, and the important point urged by the chairman was generally conceded, that in epidemics of typhoid fever there are usually, if not always, many cases of typhoid-like infections which are not true typhoid fever—that is, do not react to the Widal test. Nevertheless, such cases constitute a menace to a community, because if not looked after they will spread. This recognition of the typhoid-like infections is important. Mention might be made of many other excellent and valuable papers read in the different sections did space permit. As with the opening of the new medical building of McGill University, the hospitality of those responsible for the arrangements of the Canadian Medical Association was bounteous. Garden parties, teas, receptions, and excursions were the order of the day and evening, and as the weather was fine were thoroughly appreciated by the medical visitors, some four hundred in number. An especially pleasing feature of the general meeting was the presentation of a bound illuminated copy of the first issue of the *Journal* of the Canadian Medical Association to Dr. Andrew Macphail for his energy and great assistance in establishing this publication.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Physicians of Edinburgh and the National Insurance Bill.

THE following resolutions with reference to the National Insurance Bill were passed by the Royal College of Physicians of Edinburgh at a meeting held on June 27th:—

1. That the medical profession should be adequately represented on—(*a*) the Insurance Commission; (*b*) the Advisory Committee; (*c*) the Local Health Committees.

2. That "medical benefit" and "maternity benefit" should be administered by the Local Health Committees and not by "approved societies."

3. That in respect of the administration of "medical benefit" the "arrangements with duly qualified medical practitioners" made by the Local Health Committees should be such as to admit of free choice of the medical practitioner on the part of the insured person; and that in respect of the administration of "maternity benefit" the like free choice of medical practitioner or midwife on the part of the person receiving "maternity benefit" should be admitted.

4. That it be enacted, that the drugs and medicines supplied shall be of the standard required by the British Pharmacopœia, and that the dispensing of prescriptions shall be carried out by legally qualified persons.

5. That in respect of the grant of subscriptions and donations to hospitals and other charitable institutions, contemplated in Clause 17 of the Bill, power should be given to Local Health Committees to grant subscriptions or donations to hospitals or other similar institutions.

6. That in "maternity cases" attended by a midwife, the Local Health Committee should be empowered to pay for the attendance of a medical practitioner should such attendance be called for by the midwife in accordance with the rules governing her practice.

7. That the capitation sum of 6*s.* which has been suggested for "medical benefits" is inadequate to secure the standard of medical attendance and drugs which is essential.

8. That in respect of the deposit contributor class, which will consist of members other than the picked lives of the friendly societies, a higher remuneration for medical attendance should be provided than in the case of those insured through Friendly Societies.

9. That the "medical benefits" under the Act be limited to persons whose average income from all sources does not exceed £2 per week.

Aberdeen Asylums.

In the annual report of the General Board of Commissioners in Lunacy for Scotland, the comparative absence of tuberculous disease in the causation of death in the Aberdeen Royal Asylum is specially referred to, and is ascribed to the satisfactory hygienic conditions in which the patients are placed, and to a suitable and abundant diet. During the year an old man of 90 died, who had been an inmate of the asylum for 68 years, probably a record residence. A considerable reduction has taken place in the use of restraint in the treatment of patients, and the efficiency of the medical treatment is commented on in the report in laudatory terms. In the Aberdeen City Asylum the cleanliness and brightness of every section of the institution are noted. The boarding-out of patients who no longer need the expensive and elaborate provisions of asylum care is receiving the attention of the Aberdeen parish council. As a result of reluctance on the part of relatives to consent to such examinations, post-mortem verification of the cause of death is in extremely low proportion. Provision of cottages for married attendants, it is hoped, will result in the retention of a trustworthy and well-behaved class of men. This is a most desirable aim, as three nurses and two attendants have recently been dismissed for ill-treatment of, or roughness to, patients. The management of the institution is regarded as capable and conscientious. In the Aberdeen county district there has been an increase of 19 insane persons, in Inverness an increase of 13, and in Shetland of 17. None of these increases can be attributed to increase in population, and the last constitutes an unusual increase in a small county with a falling population. Possibly some change in local administration may explain the increase.

July 4th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Bill: a Deputation to the Local Government Board.

THE committee of the Irish Medical Association appointed to wait upon Mr. Lloyd George reported to the meeting of practitioners held in Dublin on June 30th that the Chancellor of the Exchequer had referred it to the Irish Local Government Board, which would report to him its demands. Accordingly, on June 30th, the deputation met the three Commissioners of that Board in Dublin, and a long discussion took place. Apparently the Irish Board advised the Chancellor in reference to the Irish portion of the Bill and the Commissioners evidently supposed that all that was to be done was to increase the salary of the dispensary medical officers working the insurance scheme by the simple expedient of adding 2*s.* or 3*s.* per insurance patient per annum to the pay of the dispensary officers. They seem to have overlooked the fact that in Ireland, out of the 2724 members of the medical profession, about 810, or less than one-third, are dispensary

medical officers, and that in the towns, especially the industrial ones, such a scheme would be hopeless, for it would be an impossibility for the dispensary medical officers to do all the work; it would be grossly unfair to the other medical men in these towns, and in the sparsely populated poorer districts no more patients would be added to the dispensary medical officer's list, for practically he has to attend them all at present. Further, it must appear that the Local Government Board in Ireland thinks that if the scheme passes it would itself be the controlling authority, a policy that would be resisted. Finally, the Commissioner who presided admitted that they had never thought of the question of the voluntary hospitals in relation to the scheme.

The Medical Profession of Ireland and the National Insurance Bill.

A mass meeting of the medical profession in Ireland was held on June 30th in Dublin to discuss the relation of the National Insurance Bill to the interests of medical men. Although less than a week's notice had been given of the time and place of meeting, medical men attended from all parts of the country. The resolutions proposed and passed were based on the results of a referendum undertaken by the Irish Medical Association. They were as follows:—

1. That this mass meeting of the medical profession in Ireland approves of the following: (*i*) A total income limit of £2 a week for those entitled to medical benefit; (2) free choice of doctor by patient, subject to consent of doctor to act; (3) medical and maternity benefits to be administered by Local Health Committees and not by Friendly Societies; (4) the method of remuneration of medical practitioners adopted by each Local Health Committee to be according to the preference of the majority of the medical profession of the district of that Committee; (5) medical remuneration to be what the profession considers adequate, having due regard to the duties to be performed and other conditions of service.
2. This mass meeting of the medical profession in Ireland approves—(*a*) That at least one-fourth of the Committee be medical practitioners, and statutory recognition of a local Medical Committee representative of the profession in the district of each Health Committee; and (*b*) that a special Insurance Commission be instituted for Ireland.
3. That in the event of a satisfactory settlement not being arrived at under the main conditions suggested by the above, we are prepared to refuse to administer the medical and maternity benefits under the National Insurance Bill.
4. That the Committee of Council of the Irish Medical Association and the Irish committee of the British Medical Association be appointed an executive committee to look after the interests of the medical profession in Ireland in connexion with the National Insurance Bill.

A resolution urging the total rejection of the medical clauses of the Bill was proposed and cordially received, but it was ruled out of order by the chairman.

Speech by Mr. Joseph Devlin, M.P.

On the evening of June 30th Mr. Joseph Devlin, who is the head of the Ancient Order of Irish Hibernians and who represents a thoroughly working-class division of Belfast, addressed his constituents in praise of the Bill. He pointed out, however, that it must be modified for the special circumstances of Ireland, and that in order to amend it to Irish needs a committee of the Nationalist Members had been appointed, and they were making satisfactory progress in their work.

Congress of the Royal Institute of Public Health.

It is expected that the Congress of the Royal Institute of Public Health, to be held in Dublin, will be one of the largest and most successful held. Matters relating to public health, the prolongation of life, and the prevention of diseases will occupy a good portion of the time, yet the social part will be well catered for. Garden parties will be given by the Countess of Aberdeen, Sir Christopher Nixon, Dr. H. Benson, and Mr. Stanley Cochrane. A reception and conversazione will be held in the Museum, and excursions to various places of interest have been organised. Ample accommodation will be provided in the centrally situated premises of Trinity College, and all the sectional meetings will be held there. Lady Aberdeen will deliver the Presidential address on the morning of Tuesday, August 15th, when it is expected that the President, Vice-President, and honorary secretaries of the different sections and others connected with the Congress will attend in their academic and municipal robes.

Congress of the Royal Sanitary Institute.

The twenty-sixth Congress of the Royal Sanitary Institute will be held in Belfast from July 24th to 29th. In the various sections and conferences the following subjects will be considered:—Sanitary Science and Preventive Medicine: "The Prevention of Typhoid Fever" and "Sewage Purification"; Engineering and Architecture: "The Planning of a Modern City, from an Engineer's Point of View," and "Model By-Laws in Relation to Architectural Practice"; Municipal Representatives: "Municipal Lodging Houses" and "Municipal Hospitals"; Port Sanitary Authorities: "Plague Precautions in Reference to the Destruction of Rats" and "The Importation of Unsound Food"; Medical Officers of Health: "The Notification and Treatment of Non-notifiable Infectious Diseases" and "The Medical Officer of Health in Ireland"; Engineers and Surveyors: "The Discharge of Sewage into Tidal Waters" and "The Dust Nuisance, its Evils and Abatement"; Veterinary Inspectors, "The Hygiene and General Arrangements of a Modern Slaughterhouse" and "Meat Branding and the Uniformity of Meat Inspection; Sanitary Inspectors: "The Smoke Nuisance and its Abatement" and "Dairies and Milk-supply from a Sanitary Inspector's Point of View"; Women in Hygiene: "The State Endowment of Mothers" and "The Reduction of Infant and Child Mortality from Measles"; and Hygiene of Childhood, "The Hygiene of School Life" and "Infant Mortality in Towns." By an error, a sentence referring to this congress was inserted in the programme published last week of the August congress in Dublin of the Royal Institute of Public Health.

Diphtheria in Belfast.

At the monthly meeting of the Belfast city council, held on July 3rd, it was stated that in an area having its centre at Chichester Park, and a radius of about half a mile, there were 17 cases of diphtheria, 16 of which received their milk from the same dairy, and that in "swabs" taken from the family of the dairyman diphtheria bacilli were found. Between May 14th and June 17th 92 cases of infectious disease were notified—3 of typhus fever, 4 typhoid fever, 42 scarlet fever, 2 puerperal fever, 29 diphtheria, 1 membranous croup, and 9 erysipelas. There were also 60 cases of pulmonary tuberculosis. There is a marked increase in the notified cases of diphtheria.

An Irish Medical Man's Presence of Mind.

Mr. William Ormsby, while recently motoring from Ballina to Limerick, in attempting to pass a flock of sheep struck a low wall on the edge of a cliff some 50 or 60 feet above the underlying rocks. Just as the car was about to fall Mr. Ormsby jumped clear and escaped with a severe shaking.

Death of Mr. J. C. Woodside.

I regret to announce the death on June 29th, in the Royal Victoria Hospital, Belfast, after a lengthened illness, of Mr. J. C. Woodside of Ballycastle, co. Antrim, who was coroner for Ballymoney, and who for several years practised successfully in Ballycastle.

Sir George Plunkett O'Farrell, M.D.

The death of Sir George Plunkett O'Farrell on June 22nd, which was briefly announced in this column last week, has followed closely on his retirement from office as Lunacy Inspector in Ireland, as it was only in July of last year that he gave up this post. Sir George O'Farrell was the son of a medical man enjoying a good practice in Boyle, county Roscommon. He was educated at Trinity College, Dublin, where he won many distinctions, of which the chief were a moderatorship in natural science and the travelling studentship in medicine. Having finished his medical studies he joined his father in practice in his native town. In 1885 he was offered and accepted a medical inspectorship under the Local Government Board. Four years later he became Inspector of Reformatories and member of the General Prisons Board. This office he held for only a brief time, as in the following year he became one of the two Inspectors of Lunatics in Ireland. It was in this post that his most important public work was done. At the time of his appointment he was not an expert in insanity, and his lack of experience led to some difficulties in his intercourse with the more experienced heads of asylums. As time went by, however, O'Farrell became at home in his work, and his reports showed a thorough grip of the many problems arising in connexion with the care of the insane. It is not too much to say that much of the improvement in Irish asylums in the past 20 years is due to the wise advice and supervision of O'Farrell and his colleague, Dr. E. M. Courtenay. In particular they were active in removing the insane from workhouses to

asylums, a reform of great importance. They strove, too, for the betterment of the conditions of services of asylum attendants. In 1899 Dr. O'Farrell received the honour of knighthood. Last year, on his retirement from office, the officials of the Irish asylums joined in a presentation to Sir George O'Farrell in token of their appreciation of his work as Inspector of Lunatics.

The Water-supply of Belfast.

As is well known, all water undertakings are maintained by the amount of rainfall available in each during the six wet months—October to March, inclusive. The remaining six months—from April to September, inclusive—are known as the six dry months, during which very little water is available. Previous to the present extraordinary year, the lowest rainfall on record during the six wet months was from October to March, inclusive, of 1886–87, and amounted to 17·20 in. rainfall; the next driest was during the same wet months in 1892–93, when the amount of rainfall was 18·21 in.; while during the six wet months 1910–11 the rainfall was only 16·01 in., and this constitutes—as far as the Belfast water-supply is concerned—the lowest rainfall on record. But even since the end of March there has been very little rain, hence the Belfast Water Commissioners have wisely advised that all water consumers should exercise the greatest economy in the legitimate use of water for all purposes in order to avoid inconvenience at the end of the present summer.

July 4th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Classical Studies in the Preliminary Course for Medicine.

THE medical syndicates are protesting vigorously against a decision announced last year by the Minister of Public Instruction. Up to now, in order to enter as a student in the Faculty of Medicine it has been necessary to obtain a special diploma, the certificate in physics, chemistry, and the natural sciences—commonly known as the P.C.N.—which is obtainable after a year's work in a university faculty of science. The possession of a Bachelor's diploma, however, was a pre-requisite to beginning these studies. Now there are four kinds of baccalaureate, according to the greater or less requirements respectively in Latin and Greek, the pure sciences, and living languages. The admission to the course for the P.C.N. as a step towards the study of medicine thus necessitated the acquirement of one or other of the three baccalaureates of which Latin and Greek form a component part; for the possessors of the fourth baccalaureate, obtainable on a curriculum of science and living languages, without Latin, Greek, or philosophy, and established for students on leaving the superior primary schools without any training in classical studies, were excluded. By a decree of April 16th, 1910, it was decided to admit the holders of this reduced baccalaureate to the course of the P.C.N., and consequently to throw open to them the medical curriculum, so that in future it will be no longer necessary to have undergone a classical course in order to enter on the study of medicine. This decision, prompted apparently by the political motive of throwing open to the proletariat the liberal professions, by removing the barrier hitherto interposed by the necessity for a preliminary classical education, has given rise to the most lively protests. The various medical societies of the Arrondissements of Paris, the Syndicate of Physicians of the Seine, and even the Association of Students in Medicine, have passed resolutions protesting against this decree, and demanding the restoration of Latin and Greek to a compulsory place in the medical curriculum. A communication on this point has been presented by Dr. Blondel to the Société d'Enseignement Supérieur, which has been widely republished by the lay press. It is insisted therein that a satisfactory course of medical studies cannot be constructed or a good medical practitioner trained except on the basis of a solid classical education. An acquaintance with Latin and Greek is indispensable for comprehending and retaining the terms of medical nomenclature, formed for the most part from one or other of these languages, and adopted bodily into the vocabularies of foreign tongues, thus facilitating at least a superficial comprehension by physicians of books and journals written in languages other than their own. It is further asserted that even the mentality of the medical man in relation to the practice of his art would suffer from the absence of a classical education. For the making of a diagnosis is accomplished by an intellectual operation which is in effect a hypothesis—that is to say, the medical man has to arrive at a conclusion from a part only of the elements of the problem. It is therefore necessary that his mind should have previously undergone a training in reasoning such as the philosophic studies alone can give. In practice the medical man of classical education is endowed, says Dr. Blondel, with faculties superior to those of his *confrères* not similarly favoured. His general culture, derived from familiarity with the ancient authors who have moulded the mental faculties of all preceding European generations, is certainly superior; and for the developing in him of the qualities of tact, discriminating compassion, and solace to those who suffer, nothing can replace them. The well-known surgeon, Dr. Labbé, president of the Academy of Medicine, and Senator, will lay before the Senate a *résumé* of the views of the medical syndicates and the medical press, and will call upon the Minister to restore the former condition of things.

The Services of Public Assistance.

M. Mirman, Director of Public Assistance and Hygiene, has presented to the Conseil Supérieur de l'Assistance a report covering his entire services. The labours in puericulture, maternal assistance, and the protection of children of tender age have lowered the infant mortality below one year. The mean yearly death-rate in communities with a population of more than 5000 inhabitants was 258 from 1892–95; 229 from 1896–1900; and 164 from 1901–05. In 1906, 145 died; in 1907, 129; in 1908, 129; and in 1909, 117. The number of people receiving gratuitous medical aid increases constantly. The total of those so assisted, either in their own homes or in hospitals, which in 1905 amounted to 615,872, rose in 1909 to 996,539 by a continuous and almost regular increase of 27,000 per annum. The increase in expense mounts by an even more violent progression. Starting at 3,696,000 francs in 1895, it attained in 1909 the figure of 18,416,000 francs. Under the law of 1905 for the assistance of the aged, the infirm, and the incurables, the number of beneficiaries does not cease to increase, though the rate of increase is receding, for since the third quarter of 1908 this figure, which was then 515,480, has increased in succeeding quarters by 25,000, then 7000, and 6000, until at the end of the first quarter of 1911 the increase was only 77. The annual expense of the administration of the law of 1905 is about 100,000 francs.

The Transformation of the Hôtel Dieu.

The Public Assistance proposes to devote to the work of transforming the Hôtel Dieu a part of the funds that have been allotted to it out of the municipal loan of 900,000,000 francs. The chief feature of the plan consists in the installation of a maternity department, of which the Hôtel Dieu has been deprived since the demolishing of the annex in the Rue de la Bucherie. The new maternity will be situated in the eastern portion of the buildings overlooking the Quai aux Fleurs. The plan contemplates also a consolidating of the ophthalmologic services at present disseminated through the hospital, as well as the construction of a new linen department and of two operating rooms furnished with modern apparatus and instruments, and equipped according to the desiderata laid down by the surgical staff. The greater part of the other services will be reinstalled under better conditions, and a radiographic service will be established, so as to allow the patients to be examined at the Hôtel Dieu itself, instead of their being sent to the central radiographic service at the Salpêtrière. Finally, the Hôtel Dieu will be fitted throughout with electric light and steam heat. The estimated expense will be about 1,810,000 francs. The plan prepared by the Administration of Public Assistance will doubtless come before the Municipal Council during its present session.

July 3rd.

NATIONAL ASSOCIATION FOR THE FEEBLE-MINDED.—The Princess Christian's Farm Colony will be opened by H.R.H. Princess Christian of Schleswig-Holstein on Tuesday next, July 11th, at 3.30 P.M., at Hildenborough, Kent.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Question of a Statutory Compulsion of Medical Practitioners to Attend Patients.

AT a recent meeting of the Parliamentary Committee which is considering the Bill for the suppression of medical practice by unqualified persons some members moved that qualified medical men should be liable to punishment if they declined to attend patients who sought their advice, exceptions being admitted only under the law. The supporters of this view said that if this Bill became law qualified medical men would have a monopoly of treating certain diseases to the complete exclusion of unqualified persons, and this being so they must not be allowed to decline attendance on patients desirous of consulting them, as otherwise great inconvenience may arise for the public. The Secretary of State replied that statutory provisions in this sense had existed until about the year 1867; they could not be re-enacted now, and would, moreover, be quite useless at the present time, when qualified medical men were so numerous and competed with one another so that the public was nowhere without opportunities of obtaining proper medical attendance. He stated that he had no knowledge of the existence in any country of such compulsion of medical men to attend every patient, but he would request the medical chambers to communicate with him on the subject. This proposal has caused great indignation throughout the profession, although it is very unlikely that it will be adopted. The editor of the *Zeitschrift für Ärztliche Fortbildung*, a journal for post-graduate study, has made inquiries for the purpose of ascertaining whether anything of the nature of such compulsory attendance exists in foreign countries, and the results of that investigation, which included the United States of America, Belgium, Denmark, Great Britain, France, the Netherlands, Norway, Austria, Russia, Sweden, Switzerland, and Hungary, were published in a recent issue of that journal. It was stated that a similar provision exists in only one of the above-mentioned countries—namely, in Russia. According to the Russian law a medical man is obliged to see a patient in the latter's residence when asked to do so, and this obligation is specially binding when he is requested by a midwife to attend a confinement; the fines for failure to comply with the law are 10 roubles (about £1) for the first contravention, 50 roubles for the second, and 100 roubles for the third. In the case of a confinement the medical man is even liable to punishment if he leaves the woman before the end of the labour. No other country has such draconic legislation, but in certain countries, as, for instance, in Sweden and in Norway, the governmental and municipal medical officer must attend patients when requested to do so; in Switzerland and in Hungary there is a statutory obligation on medical practitioners to give first aid to injured persons and to those who are taken suddenly ill; but in the majority of the countries there is no law at all of that kind. The answer received from France in reply to the query was very characteristic, being to the effect that medical practitioners in that country were not under any compulsion to attend patients even in urgent cases; the question was one of humanity, and it has not yet been found necessary to enact laws compelling the medical profession to be humane. Undoubtedly the medical chambers will give a unanimous opinion adverse to the proposed innovation, but the incident makes it obvious that the Bill in question has many Parliamentary opponents who are doing their utmost to hinder its adoption.

The Wassermann Reaction in Lead Poisoning.

Dr. Dreyer of Cologne, writing to the *Deutsche Medizinische Woohenschrift*, states that he has obtained a positive Wassermann reaction in certain cases of lead poisoning. Of 35 cases examined, 4 showed the reaction, although the men had never been syphilitic. In 25 of them the sera were, moreover, examined according to Stern's modified method, the result being that a positive reaction was obtained in 12 cases. Dr. Dreyer considers that the lead poisoning itself and not the anæmia of the patients was very likely the cause of the reaction being positive, as it was always negative in cases of anæmia from other causes. He has further investigated the question whether poisoning by other metals has the same effect; he found that three cases of chronic mercurial poisoning in men employed in factories where mercury was much used had an absolutely negative reaction. Dr. Dreyer's statements are confirmed by Dr. Schnitter of Offenbach, who examined the blood serum of 16 workmen presenting symptoms of lead poisoning; 4 of the men showed a positive reaction; 1 of them had suffered from syphilis three years ago, although no symptoms of the disease existed at the time of the examination. It was worthy of notice that in the blood of the cases giving a positive reaction a great quantity of basophilic erythrocytes was present. The men giving a positive reaction had been engaged in the lead work for various periods from 18 to 40 weeks, and the others for periods from two days to seven weeks; it was therefore probable that the positive reaction in lead poisoning depends on the degree and the duration of the poisoning.

July 3rd.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

South African Memorial to King Edward.

IN order to test the general feeling of the South African public on the question of the form to be taken by a memorial to King Edward, the committee, instituted as described in THE LANCET, of Feb. 4th, addressed communications to the different local and health authorities and to the medical societies throughout the Union, inquiring whether they were in favour of an order of nurses, of the establishment of sanatoriums, or of any other plan of a similar character equally appropriate as a memorial and more likely to be acceptable to South Africa as a whole. The replies received, which were almost without exception cordially in support of the movement, favour in the proportion of 4 to 1 the establishment of an order of nurses—the Viscountess Gladstone's own proposal—in preference to sanatoriums. The larger towns were mostly in favour of sanatoriums, but in these the need for trained nursing assistance is not so pressing as in up-country villages, owing to the fact that the former are mostly provided with hospitals. The smaller towns were unanimous in favour of the nursing scheme, while the medical societies were fairly evenly divided on the two proposals. An appeal has just been made by the committee for a minimum capital sum of £100,000, which it is estimated will be required to place the nursing scheme on a sound footing.

The New Order of Nurses.

It is proposed that branches of the new Order of Nurses should be established at appropriate centres in each province, selected with particular regard to facility of railway communication. Each branch is to be under the supervision of a matron. The nurses will be required to possess such certificates in general nursing and midwifery as are requisite for registration in any part of the Union, and to have as far as possible experience of South African conditions. They will receive fixed salaries, the money received from fees being paid by the matron into the central fund. Except in urgent cases the services of the nurses will be available only on requisition by a medical man, on whose certificate and subject to instructions from the central committee, the matron will decide whether full fees are to be charged or whether part or total remissions shall be made. The expenses of the order will be met in part from fees and in part from donations and subscriptions. As the needs of the Europeans and the natives are distinct, it is proposed that the contributions of the coloured and native population should be devoted to the training of coloured and native nurses at Lovedale and similar institutions, and in order to give effect to this that the contributions from the coloured and native population to the memorial should be kept distinct. In an otherwise excellent scheme this appears to be likely to prove unsatisfactory, for the difficulty is at present for the few coloured or native trained nurses in South Africa to obtain work, and to increase the number of these nurses without finding them situations will not be of much benefit. It would probably have been better to provide for the funds to be utilised in employing salaried and native nurses at centres where there

are large coloured and native populations, but if the appeal is successful this will doubtless be done. It is to be trusted that Lady Gladstone's endeavours will be successful and that her appeal to the generosity of South Africans will not be made in vain. The Association for the Prevention of Tuberculosis, an association established some years ago in Cape Town, has tried in recent years as a main objective to induce the Government to establish a number of sanatoriums; and apparently when the memorial committee was sounding the public as to the form of proposed memorial its council took steps to impress upon the committee its views. The public, as already stated, were against this proposal, and the committee had no option but to reject it accordingly. Some of the council, including the Mayor of Cape Town, however, have handed in their resignations in indignation at what is held generally to have been an unwarrented protest.

Prevalence of Tuberculosis.

The memorial committee has considered very carefully the question of the memorial taking the form of sanatoriums, and published a letter addressed by it to the Prime Minister on the subject. In this letter it was stated that in the course of its inquiry the committee had been deeply impressed by the evidence from all parts of the Union of the need of some provision for the treatment and prevention of consumption, and that it desired to direct his attention to the magnitude of the evil and the state of public feeling on it. In commending it to the attention of the Government, the committee expressed the earnest hope that the Government might find it possible to take measures without delay to remedy what is indisputably a serious danger in the future of South Africa. The tuberculosis menace has been strenuously impressed upon the Government recently from other directions. The recent Medical Congress passed the following resolution on the subject:—

> That this Congress, recognising the serious prevalence of tuberculosis among the European and coloured races of this country, and the inadequacy of the present means of coping with the disease, respectfully requests the Government to appoint a Commission to investigate the amount of tuberculosis among the white and coloured races of the Union, what steps are being taken in the different Provinces to deal with the disease, and what provisions exist for research and for the treatment of tuberculosis according to the best methods known to modern science.

A few weeks ago a deputation from the Standing Committee of Congress waited upon the Minister for the Interior to present this and other resolutions. General Smuts informed the deputation that he thought a Commission might perhaps serve a useful purpose and that the Government would give the matter due consideration. Recently, also, a joint deputation from the Association for the Prevention of Tuberculosis and the Western branch of the British Medical Association waited upon the Cape Administrator with a view to urging upon the Government of that province the necessity of providing adequate hospital accommodation for consumptives. The Administrator explained that the providing of sanatoriums might be considered a public health measure, and, if so, the Provincial Government could not very well do anything in the matter without the sanction of the Union Government. He, however, stated that as hospitals were under the provincial governments it was possible sanatoriums might also be held to be under the local administrations, in which case he would bear their representations in mind. He explained that a new chronic sick hospital was shortly to be erected in the vicinity of Cape Town, and said that he proposed to ask the Provincial Council to sanction expenditure for a special consumptive block to be used for cases that were beyond hope of recovery and which if left in their homes were considered to be a menace to the public. The subject of tuberculosis was also recently discussed in the Cape Provincial Council, when on the motion of Dr. B. Hewat, Member for Cape Town, a select committee was appointed to consider the matter. The select committee, however, after taking some evidence, is understood to have brought up merely an interim report recommending that it should be reappointed the following session. It is understood that in view of the pressure that has been brought to bear on Ministers the Government is seriously considering the appointment of a commission to go into the whole question. It is not quite easy to realise what there really is for a commission to investigate, for no new facts or figures are likely to be elicited. But, of course, the recommendations of a commission would carry weight, particularly if its members were medical experts. If such a commission is appointed no doubt the Standing Committee of Congress and the various medical societies in South Africa will take action to ensure that the views of the profession in South Africa are represented to the Commissioners, and that the Commissioners impress upon the Government that this national danger cannot be adequately dealt with except under the guidance of a properly organised health department under its own expert head. Dr. P. Murison, medical officer of health of Durban, has induced the council of that town to appoint an experienced medical officer to work under his direction in connexion with a municipal dispensary that is to be opened in Durban for the treatment of any tuberculous pauper requiring medical treatment. Care is to be taken to prevent the possibility of abuse of the dispensary. The medical officer who has been appointed will, it is understood, also be available to assist Dr. Murison in other directions, but he is expected to concentrate mainly on the tuberculosis problem. The experiment will be watched with interest by workers in public health in South Africa, and if it appears to be a success doubtless an effort will be made to induce some of the other large municipalities to follow the example of Durban.

June 10th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Administrative Control of Consumption.

THE complete list of recommendations made by the recent conference of heads of State public health departments for the administrative control of consumption was published on May 6th. The most novel were the following:—

> 12. Legal power should be given to examine medically contacts of a consumptive patient.
>
> 18. Legal power should be given to the central health authority to regulate the conditions in which home-dwelling consumptives live. The object of notification being the control of the consumptive as a possible disseminator of infection, there should be power not merely to visit him and inquire into the circumstances in which he lives, not merely to advise him what he should do for the safety of others, but power to direct him to take the few and simple precautions which are necessary to safeguard his housemates. The penalty for persistent disobedience, or the consequence of the physical impossibility of taking these simple precautions, is but one, and is mentioned in the next resolution.
>
> 19. Legal power should be given to the central health authority to remove dangerous consumptives into segregation on the order of a police magistrate given after private hearing on application of the central health authority. This is but a corollary to the preceding resolution. It would very rarely be necessary to exercise this power, but possession of it is indispensable. It would be applied (*a*) to the small number of persons who persistently decline to take the precautions enjoined upon them for the safety of others; (*b*) to the somewhat larger number of persons whose circumstances, either of poverty or of advanced illness combined with small means, render observance of the necessary precautions by them physically impossible. This form of control should be applicable not merely to persons in dwellings, institutions, and the like places, but also to those frequenting workshops and places of public resort.
>
> 20. The duration of the legal detention of persons compulsorily segregated should be determined only by order of the court on recommendation of the central health authority, any patient to have the right to apply for release. Any permit of release must be obtained on application to the court.

These proposals were at once adversely criticised and it is unlikely they will be proposed in the House.

Imperial University Congress.

The Senate of the Sydney University has nominated Earl Beauchamp (formerly Governor of New South Wales), Professor Anderson Stuart, Professor Warren, Dean of the Faculty of Engineering, and Mr. Burff, Registrar of the University, as delegates to the Imperial University Congress

New South Wales Country Hospitals.

A deputation of medical men have waited on the acting Chief Secretary to protest against the following circular with regard to the appointment of honorary medical officers to all subsidised hospitals outside the metropolis:—

> A place on the medical staff shall be open to every reputable practitioner of the district who desires to occupy one, the roster to be settled by the committee after consultation with the medical men who have been appointed on their application, all appointments to be effective; the title of "honorary surgeon" to be abolished as a distinctive designation, but retained if preferred on condition it applies to all members of the medical staff alike.

The payment of Government grants was made conditional on the acceptance of this proposal. The main objection of the deputation was that no choice was left to the controlling

bodies of hospitals, and that in small hospitals a chaotic condition would ensue if the staff was over-manned. The Chief Secretary promised that the matter would be reconsidered, but stated it had been adopted on the advice of the chief medical officer to the Government.

Royal Prince Alfred Hospital, Sydney.

The twenty-seventh annual meeting of this institution was held in Sydney on April 26th. The strain on the hospital resources had been greater during the past year than at any previous period, the daily average of occupied beds being 372. Operations totalled 3901. Professor Anderson Stuart, who was in the chair, stated that the financial position was unsatisfactory, and that the debit balance would be increased unless Government assistance was forthcoming. Unless some relief were obtained it would be necessary to consider reducing the number of beds, a step the committee were loth to take. The expenditure was £28,764.

The Use of Hospital Funds.

The Acting Premier of Victoria has criticised adversely the action of the Melbourne Alfred Hospital authorities in devoting £50 from the general hospital revenue to the payment of portion of salary of a clinical pathologist. One of the physicians to the hospital has replied in the daily press that such a position must be filled in the interests of the patients and hospital at the same time.

Care of Children.

The report of a committee appointed by the Child-saving Council of Melbourne strongly urges that the boarding-out system should be extended. The committee were struck with the irresponsive demeanour of institutional children as compared with those in the care of foster parents. Institutions should be limited as far as possible to: (1) receiving homes; (2) homes for wayward children; (3) homes for mentally defective children; and (4) for those requiring technical training. There was evidence of overlapping among existing institutions. All homes should be subject to regular medical inspection. Surprise was expressed that so few of the homes maintained trained nurses on the staff.

The Richmond Railway Accident.

The Minister for Railways for Victoria has handed to the press a list of the medical men who were paid by the department for their attendance on sufferers in the Richmond railway accident which occurred in July, 1910, and resulted in alleged injury to some 480 persons. The total amount paid in medical fees was £16,699 13*s.* 6*d.*, besides £982 for private hospital accommodation. The individual amounts varied from £2 2*s.* to £1984. It has been generally felt that some better system will have to be put in force in the future. Although such a list makes no mention of the actual work done, in many cases the fees charged appeared excessive in amount. It is not intended to convey that this is brought about except by a needless number of visits being entered against the department. It is calculated that on a basis of 10*s.* per visit over 32,000 visits were paid for.

Health of Miners.

A Royal Commission has been appointed by the Queensland Government, consisting of Mr. Murphy, M.L.A., Mr. Jackson, M.C.E., and Dr. J. S. C. Elkington, to inquire into the health and conditions of work of miners in various parts of Queensland. The incidence of pulmonary diseases and the regulation of employment of persons suffering from tuberculosis as miners are to form part of the inquiry.

New Brisbane Hospital.

The Mater Misericordiæ Hospital, which has been established in Brisbane by a nursing sisterhood of the Roman Catholic Church, is now open for patients, and appears to be very complete as regards building and equipment. The honorary staff as at present constituted comprises four surgeons, four physicians, and there are special departments for dermatology, ophthalmology, pathology, and dentistry.

Obituary.

The death of Alexander Lawrence, M.D. Edin., L.R.C.S. Edin., is announced from Adelaide, in which city he practised for many years past. The late Dr. Lawrence was a native of Brechin, Forfar. He had an intimate acquaintance with small-pox and was frequently consulted as an expert in quarantine cases. He originally came to South Australia on account of his health, having been in practice in the old country. Personally, he was very popular and enjoyed the confidence of a large circle of patients. He leaves one son and daughter, the latter having married Dr. Lionel Hayward some years ago.

June 5th.

Medical News.

UNIVERSITY OF OXFORD.—The following candidates have been approved in the undermentioned examinations:—

FIRST B.M.

Organic Chemistry.—H. E. Bamber, J. N. L. Blarney, L. G. Burford, A. Jackson, T. L. Price, J. A. G. Sparrow, and A. Traill.

Human Anatomy and Physiology.—H. E. A. Boldero, L. G. Brown, F. B. Chavasse, W. T. Collier, V. T. Ellwood, R. C. Fairbairn, R. J. Inman, M. R. Laurence, G. A. Maling, T. S. Nelson, O. B. Pratt, G. S. Robinson, C. P. Sells, J. A. G. Sparrow, N. A. Sprott, C. P. Symonds, and H. A. B. Whitelocke.

SECOND B.M.

Medica Materia and Pharmacology.—W. J. Hart, H. M. Pope, E. Scott, and J. A. Wood.

Pathology.—J. L. Birley, A. Booth, C. H. Budd, A. A. M. Davies, H. T. Evans, R. A. Faucus, J. R. Kay-Monat, D. P. M'Donald, W. H. Ogilvie, R. C. Ozanne, H. M. Pope, J. Salusbury, W. W. Wagstaffe, and R. O. Ward.

Forensic Medicine and Public Health.—H. C. Bazett, J. L. Birley, A. Booth, N. S Lucas, H. W. Scott-Wilson, P. T. Spencer-Phillips, C. J. G. Taylor, W. W. Wagstaffe, and W. C. Wigan.

Medicine, Surgery, and Midwifery.—H. C. Bazett, A. R. Chavasse H. J. B. Fry, A. D. Gardner, J. A. Noble, E. R. Pearce-Gould J. F. Penson, P. T. Spencer-Phillips, and W. W. Wagstaffe.

The following degree has been conferred:—

D.M.—Charles Singer.

UNIVERSITY OF LEEDS.—At a Congregation of the University held on June 30th the following pass lists were issued:—

SECOND M.B., CH.B. EXAMINATION.

Part I.—C. M. Gozney, B. Hesterlow, W. D. A. King, and J. Wright

Part II.—W. D. Anderton, R. H. Chadwick, D. A. P. Clarke, S. N. Cohen, J. J. Digges la Touche, H. Foxton, A. S. Hebblethwaite, B. Hesterlow, F. King, W. D. A. King, H. S. Lockwood, K. Menon, H. W. Robinson, C. H. Seville, H. Shochet, J. Wilkinson, and C. Wilson.

FINAL M.B., CH.B. EXAMINATION.

Part I.—H. Angel, J. H. Blackburn, T. Elliott, J. Ferguson, G. W. L. Kirk, G. P. Mellis, J. C. Metcalfe, N. V. Mitton, M. Peto, S. Samuel, and H. W. Symons.

Part II.—C. S. Brown, J. B. Fisher, A. Riley, and T. L. Walker. Mr. Fisher has been awarded first-class honours.

Diploma in Public Health.—C. N. Smith.

Diploma in Dental Surgery (First Professional Examination).—H. V. Waddington.

ROYAL SOCIETY OF ARTS.—The annual general meeting of the Royal Society of Arts took place recently, Sir John Cameron Lamb, C.B., C.M.G., chairman of the council, presiding. The annual report shows that the office of president has now been accepted by H.R.H. the Duke of Connaught. Up to the death of King Edward VII. it was occupied by H.R.H. the Prince of Wales (King George V.), and, on his accession to the throne, it was temporarily held by the Lord Chief Justice. During the year 22 papers were read at the ordinary meetings of the society, six in the Indian, and five in the colonial section. There has been, as usual, an increase in the entries for the society's examination, the total number of papers worked this year being 34,260. Under the Fothergill Trust, as has been announced in THE LANCET, the council has made the following awards for life-saving apparatus for use in mines and places where the air is noxious: gold medals to Mr. H. A. Fleuss and Mr. W. E. Garforth, and silver medals to Mr. Richard Jacobson and the Mining Engineering Company. The society's Albert medal has been awarded to the Hon. Sir Charles A. Parsons, K.C.B., F.R.S., for his experimental researches into the laws governing the efficient action of steam in engines of the turbine type. The council has awarded silver medals

for papers read during the past session to Dr. Leonard Hill for his paper on "Caisson Sickness and Compressed Air," and to Mr. James Cantlie for his paper on "Plague."

THE MIDWIVES ACT, 1902.—It is officially notified in the *London Gazette* that the Privy Council has approved of revised rules, for the period of five years commencing on July 1st, submitted to it by the Central Midwives Board.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY'S GOLD MEDAL.—The gold medal of this society, which in awarded every three years for distinguished work is medical science, was presented to Professor A. Neisser on June 27th at the Kensington Town-hall, after he had delivered the Cavendish Lecture.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on June 16th. There were present Dr. F. de Havilland Hall (in the chair), Dr. St. Clair B. Shadwell, Dr. F. C. Martley, Dr. F. S. Palmer, Dr. J. Pickett, Dr. H. A. Sansom, Mr. J. Brindley-James, Mr. H. P. Symonds, Dr. R. Hutchison, Dr. F. J. Allan, Dr. W. Knowsley Sibley, and Dr. J. B. Ball. The business of the society during the last few months has been very satisfactory. Although fairly numerous, the sickness claims have been for the most part of short duration, and the total sickness pay disbursed has been well under the amount expected and provided for in the rates of contribution. With the view of mitigating the hardships of some of the cases of distress which come under the notice of the committee it was resolved to subscribe 100 guineas a year to the British Medical Benevolent Fund. The funds of the Medical Sickness and Accident Society cannot be directly used for charitable purposes, but the committee trusts that this subscription will enable it in some cases to be of use to members of the society in temporary distress. Prospectuses and all further information may be had on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

ASSOCIATION OF MEDICAL OFFICERS OF HEALTH.—A council meeting of this association was held at the Holborn Restaurant on June 15th, Dr. Rashell T. Davison being in the chair. Mr. D. A. Belilios, the honorary secretary, reported that the following associations and societies had appointed delegates to the Joint Permanent Committee of General Practitioners who hold public appointments under central or local bodies: Poor-law Medical Officers, Public Vaccinators, Postal Medical Officers, Metropolitan Police Surgeons, Certifying Factory Surgeons, and the Association of Medical Officers of Health. The council appointed Dr. Rashell Davison, Dr. F. G. Crookshank, and Mr. Belilios to represent the association.—A meeting of the Joint Permanent Committee of Medical Officers was held later, when the temporary honorary secretary reported that the following representatives had been appointed by the respective bodies: Dr. A. E. Cope, Mr. V. A. Jaynes, and Mr. G. W. Brabyn by the Public Vaccinators; Dr. C. Owen Fowler, Dr. G. Nicol Henry, and Dr. A. Dumville Roe by the Metropolitan Police Surgeons; Dr. J. H. Keay, Dr. W. A. Atkinson, and Mr. W. H. F. Oxley by the Certifying Factory Surgeons; Dr. Major Greenwood, Mr. A. Withers Green, and Mr. T. L. Brown by the Poor-law Medical Officers; Dr. R. R. Giddings, Dr. John Matheson, and Dr. George A. Mason by the Postal Medical Officers; and Dr. Crookshank, Dr. Rashell Davison, and Mr. Belilios by the Association of Medical Officers of Health. Dr. Rashell Davison was elected to the chair, and he proposed that Mr. Henry Bott of Brentford be asked to be the chairman of the committee for the ensuing year. This was seconded by Dr. Giddings and carried unanimously. It was proposed by Dr. Mathieson, seconded by Dr. Mason, and carried, that Mr. Belilios be appointed honorary secretary and treasurer. The proposed rules of the committee were discussed and passed. A resolution was unanimously carried that the objects were to conserve the interests of all medical practitioners who hold appointments under local and central authorities. The medical provisions of the National Insurance Bill were discussed, and it was unanimously agreed that in order to preserve an unbroken line the policy of the British Medical Association as outlined in its recent circular to the profession be supported. It was further decided to bring to the notice of the British Medical Association the clause (Clause I., Part II., Schedule IV.) of the Bill which contemplates bringing women and children into medical benefits when funds become available. It was recommended that the clause be deleted. Mr. Withers Green proposed and Mr. Brown seconded—

That the medical representation on the Local Health Committee and the Advisory Committee equals at least the representation of the Friendly Societies and Post Office contributors combined. The local profession in each district to elect representatives on these committees.

It was pointed out that while the profession was unanimous in its insistence to be freed from the control of the Friendly Societies, it was not by any means clear that the control of the medical practitioners by a Local Health Committee would be any improvement unless the term "adequate" representation of the profession be defined in the Bill itself. It might mean the case of falling from the frying-pan into the fire. A vote of thanks to Dr. Rashell Davison was carried by acclamation.

THE FIFTEENTH INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.—The Fifteenth International Congress on Hygiene and Demography will be held in Washington, D.C., from Sept. 23rd to 28th, 1912, under the honorary presidency of the President of the United States. Dr. Henry P. Walcott, President of the State Board of Health of Massachusetts, will be the active president. Twenty-two Governments have already accepted the invitation to participate, issued by the Government of the United States, and in addition each of the States of the Union, which for health purposes is an independent self-governing body, has received an invitation which includes its contained cities. The committee on organisation created by the U.S. Department of State consists of 53 members, and includes Dr. Hermann Biggs, Dr. John S. Billings, Professor R. H. Chittenden, Professor Irving Fisher, Colonel Gorgas, Professor Theobald Smith, Surgeon-General Sternberg, Professor W. H. Welch, and Surgeon-General Wyman, with other well-known medical men, sanitarians, and social economists. The secretary-general is Dr. John S. Fulton, Army Medical Museum, Washington, D.C. The official languages will be English, French, and German. The work of the Congress falls into two branches: first, an exhibition of the recent progress and of the present condition of the public health movement in the coöperating countries; secondly, the scientific meetings, for which purpose the Congress will be divided into the following nine sections, each of which will meet daily and may propose resolutions regarding matters of practice or lines of desirable investigation. These resolutions will come before the closing session of the Congress. The sections are:—I. Hygienic Microbiography and Parasitology—President: Professor Theobald Smith, Harvard Medical School, Boston. II. Dietetic Hygiene, Hygienic Physiology—President: Dr. Russell H. Chittenden, Yale University, New Haven, Conn. III. Hygiene of Infancy and Childhood and School Hygiene—President: Dr. Abraham Jacobi, College of Physicians and Surgeons, New York. IV. Industrial and Occupational Hygiene—President: Dr. G. M. Kober, Georgetown University, Washington, D.C. V. Control of Infectious Diseases—President: Dr. Hermann Biggs, Department of Health, New York. VI. State and Municipal Hygiene—President: Dr. Frank F. Wesbrook, University of Minnesota, Minneapolis. VII. Hygiene of Traffic and Transportation—President: Dr. W. Wyman, U.S. Public Health and Marine Hospital Service, Washington, D.C. VIII. Military, Naval and Tropical Hygiene—President: Dr. H. G. Beyer, Medical Director, U.S. Navy, Washington, D.C. IX. Demography—President: Professor Walter J. Willcox, Cornell University, Ithaca, N.Y. Notice of a desire to present a paper or demonstration should be sent to the president of the appropriate section, enclosing an abstract of the paper. Each member will receive a report of the Transactions and of the Protocol to be published after the adjournment of the Congress. Membership in the Congress is open to those interested in public health or vital statistics on payment of the membership fee of $5 (about £1). Inquiries and applications for membership should be addressed to the Secretary-General of the Fifteenth International Congress on Hygiene and Demography, Army Medical Museum, Washington, D.C.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Medical Men and the National Insurance Bill.

WHEN Parliament reassembled after the Coronation festivities the negotiations between the Chancellor of the Exchequer and a special committee of the British Medical Association were resumed as to the position of medical men under the National Insurance Bill. The interval that has elapsed since the measure was introduced has revealed the united opposition of the profession to the terms which its members were offered, and in meeting Mr. LLOYD GEORGE the medical representatives had precise and definite demands to make. It is essential to the scheme of the Bill that the coöperation of medical men should be enlisted. There is every reason to believe that the Chancellor of the Exchequer was alive to this aspect of the situation when the negotiations were resumed, and was anxious, if possible, to secure an understanding with the medical profession before the House of Commons began the consideration of the Bill in Committee; in fact, it has been part of his general policy on the Bill as far as possible to adjust differences with various interests affected by it before Parliament sets to work on the details. Negotiations on these matters, however, are delicate and sometimes difficult. Those with the representatives of the medical profession have been conducted in private. On June 29th it was unofficially stated that a tentative agreement on several points at issue had been reached. According to this statement the Chancellor of the Exchequer had conceded free choice of medical men by insured persons and medical representation on the bodies which are to administer the Bill when it becomes law. It was further stated that the question of Friendly Society control might by consent be left to the House of Commons. The question of the income limit, which it is contended should confine the benefits of medical attendance and treatment to the less highly remunerated classes of the community, seems to have proved a very serious obstacle in the way of agreement. It is understood that the medical representatives and Mr. LLOYD GEORGE discussed the matter at length on Friday, but no settlement was reached. However, the negotiations were postponed until this week.

The PRIME MINISTER in the afternoon of Wednesday relieved general apprehension by moving that the proceedings on the National Insurance Bill, if under discussion at 11 P.M., should not be interrupted under the Standing Order.

Mr. LLOYD GEORGE, in the course of a speech on the National Insurance Bill in the House of Commons on Wednesday afternoon, let fall the remark, "substantially the opposition of the doctors has been met." The Chancellor of the Exchequer has been in negotiation with the representatives of the medical profession, and at the beginning of this week the important point of the income limit remained to be dealt with. Inquiry in a responsible quarter elicits the information that Mr. LLOYD GEORGE is now giving close consideration to the precise terms of a scheme which is designed to replace the provisions of the Bill in so far as the question of medical benefit and income-limit is involved. The representatives of the medical profession were immovably opposed to any plan under which persons who could reasonably be expected to pay fees should obtain medical attendance on the terms which the Bill gives to insured persons. It is understood that the Chancellor of the Exchequer has recognised the force of these contentions. The precise detailed terms of the new scheme have not transpired. However, it is understood that it is to proceed on the principle that persons who can pay fees to medical men for attendance but who would have medical benefit under the National Insurance Bill are to continue to pay fees, but their medical benefits are to be accumulated. When illness comes these accumulated benefits will go towards paying the medical man, and after they are exhausted the patient will pay from his own resources. A concrete case will illustrate the working of the scheme. A person who is in a position to pay medical fees becomes an insured person and his medical benefit is calculated at, say, 7*s.* per annum. He has no illness for five years. At the end of that period he has to call in a medical man. 35*s.* of medical benefit have accumulated to the credit of this patient and will be expended on paying for medical attendance on him before he has to fall back on his own resources. That is the general idea which it is understood underlies the scheme to which Mr. LLOYD GEORGE is giving his mind.

It is understood that the amendments to carry out any arrangements that are come to with the medical profession on the National Insurance Bill will, when adjusted, be placed on the notice paper by the Chancellor of the Exchequer. There will be one exception. The amendment to give the control to the Health Committees will be brought forward by a private Member.

Medical Men and the House of Commons.

Medical men have taken ample care that their claims for fair treatment under the National Insurance Bill shall be impressed on the minds of Members of Parliament. The committees and organisations in the country have been active both by lobbying at Westminster and by letter in bringing to the notice of Members the points in the measure which will operate with hardship on the profession. Undoubtedly the resolute front taken up in the country by medical men towards the Bill has produced a notable impression at Westminster, as it is recognised that their united hostility to the measure would strike a most serious blow at its usefulness.

Amendments to National Insurance Bill.

A very large number of amendments to the National Insurance Bill have been tabled. Dr. HILLIER has given notice of a series to Clause 14 (administration of medical benefit). The effect of these would be to give to the Local Health Committees the duty of making arrangements with medical practitioners for insured persons to receive attendance and treatment. By this proposal the Local Health Committees would entirely supersede the approved societies for this purpose.

Dr. HILLIER further proposes that for the purposes of this medical treatment the Health Committee shall—

"(*a*) prepare and keep a list of registered medical practitioners who have entered into arrangements with the committee for giving medical treatment and attendance to insured persons entitled to medical benefit;

"(*b*) include in the list every registered medical practitioner practising within the county or the county borough who applies to be included, unless in respect of any such practitioner the Insurance Commissioners are satisfied, after due inquiry, that his appointment would be prejudicial to the efficiency of the service, and the Insurance Commissioners may, on due inquiry and after notice to the registered medical practitioner concerned, remove from the list of registered medical practitioners for any county or county borough any medical practitioner whose conduct is prejudicial to the efficiency of the medical service or insured persons."

Dr. HILLIER also brings forward an amendment to this effect:—

"Every insured person entitled to medical benefits shall be entitled to select from the list of medical practitioners kept by the Local Health Committee a medical practitioner, and unless that medical practitioner forthwith after receiving notice of the desire of an insured person to be attended by him notifies in writing the Local Health Committee and the insured person concerned that he is unwilling to comply with the desire of the insured person it shall be the duty of that medical practitioner to attend the insured person under this part of this Act."

The honourable Member also proposes that words shall be introduced into Clause 41 to provide that amongst the Insurance Commissioners "the medical profession shall be adequately represented." He also asks that on the Advisory Committee there shall be representatives of "registered medical practitioners who have had personal experience of general practice amongst the classes from which the insured are drawn."

Sir PHILIP MAGNUS has placed upon the notice paper amendments identical to those put forward by Dr. HILLIER.

Mr. NEEDHAM has given notice of an amendment to Clause 14 similar to one which already stands on the paper. Its terms are as follows:—

"(1) All arrangements of the Local Health Committee with medical practitioners for attendance and treatment of insured persons shall be subject to the approval of the Insurance Commissioners.

(2) The Local Health Committee shall prepare a list of registered medical practitioners who have entered into arrangements with the committee for giving attendance and treatment to insured persons whose medical benefit is administered by the committee.

(3) In the list of registered medical practitioners from whom insured persons shall make their selection the Local Health Committee shall include all registered medical practitioners who apply to be included, unless in respect of any such practitioner the Insurance Commissioners are satisfied after due inquiry that his appointment would be prejudicial to the efficiency of the service.

(4) The Insurance Commissioners shall have power at any time after due inquiry to remove from the list of registered medical practitioners for any district any practitioner whose conduct is deemed by them to be prejudicial to the efficiency of the medical service of the insured.

(5) Every insured person shall be entitled to select from the list so prepared a medical practitioner, subject to the consent of such practitioner, to attend him when required."

An amendment to Clause 8 standing in the name of the Earl of RONALDSHAY is designed to meet the demand of the medical profession that no insured person shall be entited to medical benefit who is in receipt of an average income from all sources exceeding £2 per week.

Mr. ROWNTREE, in an amendment to the same clause, proposes that "medical benefit" shall include "such medical and surgical appliances as may be prescribed by the regulations to be made by the Insurance Commissioners."

A series of amendments relating to "maternity benefit" stand in the name of Mr. BEALE. One of these provides that in the admini tration of this benefit under Clause 16 the conditions "shall, as far as possible, leave to the mother the choice of being attended by a registered

medical practitioner or a duly certified midwife, and the selection of the medical practitioner or midwife from among those who according to the conditions shall be available." Another of Mr. BEALE'S amendments proposes that "maternity benefit shall not deprive the mother of the child from medical benefit so far as regards the attendance of a medical practitioner when such attendance is called in by a midwife in accordance with rules governing her practice."

Mr. WALTER ROCH has given notice of a new clause, which he puts forward as a substitute for Clause 43 (appointment of Local Health Committees). The proposed clause is in the following terms:—

"The Local Health Authority shall be—

(a) In a county borough and in a non-county borough or urban district entitled to be a pensions authority under the Old Age Pensions Act, 1908, or an authority for the purposes of Part III. of the Education Act, 1908, the Health Committee under the Public Health Acts who shall, for the purposes of this Act, add to their number by co-opting five non-members to be chosen from among members of approved societies resident within the area of their council after nominations have been invited from such societies and three women, also resident within such area and chosen by the Local Health Authority;

(b) In an administrative county, except as hereinbefore provided, the county council, who shall appoint a Local Health Committee for the purposes of this Act consisting of not less than twelve or more than twenty and made up as follows:—

(1) As to one-half by members of the county council;

(2) As to one-quarter by members of the local sanitary authorities, appointed by the council;

(3) As to one-quarter by members chosen by the council from among members of approved societies resident within the area of their council, after nominations have been invited from such societies;

(4) And such Health Committee shall co-opt [illegible]men in addition, if necessary, to the maximum number so which it is limited as hereinbefore mentioned."

Asylum Officers (Superannuation) Bill.

Evidence is now being heard by the Select Committee of the House of Commons which has been set up to deal with the Asylum Officers (Employment, Pensions and Superannuation) Bill. The first clause of this measure lays down that male attendants and nurses in asylums shall not be employed for more than 60 hours exclusive of meal times in any week, except in case of emergencies. The secretary of the Union of Asylum Workers gave evidence strongly in support of this proposal. On the other hand, some diversity of opinion was revealed in the evidence tendered on behalf of the Asylum Workers' Association. It was stated that 110 schedules of inquiry had been sent out by this body. Replies to the number of 58 had been received, and of these 28 were in favour of the provision limiting the hours to be worked by male attendants or nurses to 60 hours a week. On the other hand, 30 pronounced against an absolute limitation of 60 hours, and some of these replies stated that members would be quite willing to work 70 hours a week if they saw a prospect of retiring after 25 years' service with a fair pension. The views of the Home Office were put before the committee in reference to the question of superannuation. Twenty-five years was looked upon by it as too short a qualifying period of service as that might lead to a man retiring on pension at 45. The Home Office suggested that the age should be at least 50.

Public Health (Ireland) Bill.

The Public Health (Ireland) Bill has received a third reading in the House of Commons. It provides that any urban district council in Ireland may, in addition to any existing powers, make by-laws providing for the inspection of all meat intended to be sold within the urban district for human consumption, and prohibiting the sale of meat within the urban district for human consumption except after inspection in accordance with the by-laws.

University of Wales (No 2) Bill.

Sir DAVID BRYNMOR JONES made an unsuccessful attempt at the time of unopposed business on Monday, July 3rd, to obtain a second reading for the University of Wales (No. 2) Bill.

HOUSE OF COMMONS.

THURSDAY, JUNE 29TH.

National Insurance Topics.

Mr. ASTOR asked the Chancellor of the Exchequer whether a woman confined in a hospital or other institution would receive maternity benefit under the provisions of the National Insurance Bill; and, if so, would any portion of it be given to the institution.—Mr. LLOYD GEORGE replied: The answer to the first part of the question is in the negative and the second does not arise. I am in communication on this matter with persons responsible for the management of homes which receive maternity cases.

Mr. ASTOR also asked the right honourable gentleman how soon after the commencement of the National Insurance Bill after it had passed into law an insured person would be entitled to sanatorium benefit.—Mr. LLOYD GEORGE answered: An insured person, if a Local Health Committee considers the case one suitable for sanatorium treatment, may be entitled to sanatorium benefit as from the commencement of the Act.

Mr. CASSEL asked the right honourable gentleman what was the average number of days of sickness or invalidity under the German insurance law in the last year for which the figures were published, and what was the average number of days allowed for in the actuarial calculations under the National Insurance Bill; and whether the average number of days of sickness and invalidity under the German law had shown any tendency to increase, and, if so, at what rate.—Mr. LLOYD GEORGE said in reply: The average number of days' sickness recorded for persons insured under the German Sickness Insurance Law in 1908 (the latest year for which complete returns have been published) was eight and a half. As compared with 1904, when sickness benefits were extended from 13 to 26 weeks, there was in 1908 an increase of about half a day per head of all persons insured. These figures cannot be used without qualification for comparative purposes inasmuch as many of the German sickness funds exercise their right to grant sickness benefits up to 52 weeks. No record is kept of the duration of sickness or disablement continuing beyond the period for which the sickness funds are liable. The number of days sickness assumed by the actuaries at each age separately for the purposes of their calculations for the National Insurance Bill is shown on p. 40 of their report. The average number per head of persons of all ages insured would require a fresh calculation.

Mr. CASSEL: Do the figures which the right honourable gentleman gave for Germany include invalidity as well as sickness or sickness only?

Mr. LLOYD GEORGE: Will the right honourable gentleman put down that question? I am not quite sure of that point.

In answer to Lord BALCARRES, Mr. LLOYD GEORGE said that on Wednesday the Government would submit a motion allocating time to the remaining stages of the National Insurance Bill.

Mr. NEWMAN asked the right honourable gentleman whether, in view of the pronouncement recently made by the Irish Bench of Bishops, in addition to the resolutions passed by the public bodies, it was the intention of the Government to withdraw the National Insurance and Unemployment Bill in the case of Ireland; and, if so, whether a general recasting of the actuarial figures on which the Bill had been based would be necessary.—Mr. LLOYD GEORGE replied: The Government have no present intention of excluding Ireland from the advantages of the National Insurance Bill.

Vaccination in Halifax.

Mr. JAMES PARKER asked the President of the Local Government Board what were the number of births, of successful vaccinations of infants, and of declarations of conscientious objection to vaccination in the borough of Halifax in the years 1905, 1906, 1907, 1908, 1909, and 1910, respectively.—Mr. BURNS furnished the following written reply: The registration subdistricts of North and South Halifax are not exactly coincident with the borough, as they contain a small area outside. The figures for these districts, so far as they are available, are as follows:—

Year.	Number of births registered.	Number of these births entered by the vaccination officer as successfully vaccinated.	Number of successful primary vaccinations at all ages.	Number of certificates of conscientious objection.
1905 ...	2168	1287	No information.	
1906 ...	2165	1190	1528	235
1907 ...	2038	858	1143	275
1908 ...	2207	754	894	1057
1909 ...	1966	474	721	1002
1910 ...	1994	Not yet known.	509	1132

MONDAY, JULY 3RD.

The Sale of Milk.

Replying to Mr. BARNSTON, Sir EDWARD STRACHEY said: The Board of Agriculture has under consideration the existing provisions of the law relating to the sale of milk, and inquiries are being made as to the manner in which it is at present administered by local authorities. The existing regulations are based upon the very complete inquiry made by a Departmental Committee some few years ago, and the minutes of evidence were presented to Parliament.

National Insurance Topics.

Mr. DAVID DAVIES asked the Chancellor of the Exchequer whether the sum set apart for sanatorium benefit in the Insurance Bill was to be confined exclusively to the relief of insured persons, or whether it was to be applied in such a way as to make provision for uninsured persons as well.—Mr. LLOYD GEORGE replied: The annual sum set apart for sanatorium benefit being derived mainly from the contributions of insured persons and their employers will be confined exclusively to the relief of insured persons. But the sanatoriums which receive grants out of the capital sum set apart from last year's realised surplus will be free to take other patients.

Mr. DAVID DAVIES further asked the right honourable gentleman whether the scope of sanatorium benefit in the National Insurance Bill was limited to the treatment of tuberculosis in sanatoriums and similar institutions, or whether it included provision for education, tuberculosis exhibitions, early diagnosis, after care, and other means for the prevention and cure of this disease.—Mr. LLOYD GEORGE answered: It is not intended to confine the treatment of tuberculosis to sanatoriums, but the words of the Bill are intended to make it possible for the disease to be treated at clinics which could be established locally and in which the proper means to be taken for the prevention and cure of the disease could be taught. The Bill also provides that a portion of the funds available for the benefit can be applied to research.

Sir PHILIP MAGNUS asked whether demonstrators and assistant lecturers in universities and university colleges who, in consideration of the educational advantages they secured by acting as assistants to distinguished professors, were content to accept salaries of less than £160 per year, would be compelled to insure under the compulsory schemes of the National Insurance Bill; and whether the universities and colleges, as employers, would be obliged on behalf of such persons

to contribute to the insurance fund.—Mr. LLOYD GEORGE said in reply: The answer to both parts of the question is in the affirmative.

Major WHITE asked whether the Chancellor of the Exchequer had received any communications from associations of medical herbalists with regard to the National Insurance Bill, and whether he was prepared to give any facilities under the Bill to those insured persons who preferred to undergo herbalist treatment rather than that of the ordinary medical practitioner.—Mr. LLOYD GEORGE answered: I have received such communications, and they are receiving my consideration.

Mr. JAMES THOMAS asked the right honourable gentleman whether Section 13 of the National Insurance Bill, which provided for fines and suspensions of benefit for cases of misconduct, was intended to cover persons who refused to be vaccinated, even if ordered by a medical man; and, if such provisions were intended, whether he would so amend this section as to give every right to all those holding conscientious objections to vaccination.—Mr. LLOYD GEORGE replied: The rights of all conscientious objectors will, of course, be safeguarded under the Bill.

Sir W. P. BYLES asked the Prime Minister whether he had any communication to make to the House as to the Government's intentions with reference to the time to be allocated to the National Insurance Bill.—Mr. ASQUITH answered: It was proposed to have a special resolution which would give what the Government conceived to be a very liberal arrangement of time for this Bill. However, inquiry justifies us in the hope that we may secure the passage of the Bill in an equal time, or in less time, under the ordinary Standing Orders of the House. We shall be guided in our future action by the rate of progress which the Bill makes.

TUESDAY, JULY 4TH.

Vaccination Statistics.

Colonel RAWSON asked the President of the Local Government Board to state the number of births registered for the years 1903 to 1906, the number recorded as successfully vaccinated, and the number of certificates of exemption received in respect of such births; also the number of births registered for the years 1907 to 1910, the number recorded as successfully vaccinated, and the number of certificates of exemption received in respect of such births.—Mr. BURNS wrote in reply: The information which the honourable Member desires has not yet been received in respect of the year 1910, but the following statement gives the figures in respect of each of the years from 1903 to 1909, inclusive:—

Year.	Births.	Vaccinations.	Exemptions.
1903	948,271	714,637	37,675
1904	945,389	711,504	40,461
1905	929,293	705,040	44,369
1906	935,081	686,992	53,828
1907	918,042	651,050	76,709
1908	940,383	594,792	160,350
1909	914,472	547,251*	197,326*

* These figures are approximate and liable to correction.

Vaccination Officers.

Captain FABER asked the President of the Local Government Board whether vaccination officers had to send to parents a notice, Form Q, which put these parents in the way of obtaining exemptions from vaccination; whether exemptions were rapidly on the increase, seriously affecting the position of vaccination officers in a pecuniary sense; and whether he would consider the advisability of rewarding vaccination officers whether exemptions were granted or not.—Mr. BURNS furnished the following written reply: Vaccination officers are required, in the case of each child who has attained the age of three months and seven days without their having received a certificate of some kind with respect to its vaccinal condition, to send a notice known as Form Q to the parent, the object of which is to ascertain what the parent intends to do as to the vaccination of the child, and so to save the vaccination officer the trouble of visiting the home for this purpose. Exemptions have increased, and in such cases the vaccination officer does not, of course, receive payment in respect of the registration by him in his register of the successful vaccination of the child. Where a vaccination officer has suffered loss of income in consequence of the increase of exemptions I have approved proposals of boards of guardians to award him compensation.

The Teaching of Hygiene.

Mr. FERENS asked the President of the Board of Education how many of the education authorities were using the syllabus issued by the Education Department for the teaching of hygiene and temperance, and in how many individual schools was the syllabus regularly used.—Mr. RUNCIMAN wrote, in reply: The syllabus of lessons on temperance for scholars attending public elementary schools issued by the Board of Education in 1909 is in use in the areas of 214 of the local education authorities of England and Wales. It is not to be inferred that in the areas of the remaining 108 authorities no lessons on temperance are given. The Code commends the instruction of the older children in hygiene, particularly in relation to food and drink, including alcohol. Such lessons on this subject as are not based on the new official syllabus of 1909 will be found as a rule to follow the suggestions for the teaching of hygiene and temperance which were issued in 1905. I am unable to give information as to the actual number of schools in which the syllabus is used. Such information could only be obtained by an inquiry addressed to each of the public elementary schools in the country, which number more than 22,000.

WEDNESDAY, JULY 5TH.

National Insurance Bill.

The House went into Committee, and after deciding not to deal with the Bill in two parts under its heading of Invalidity and Unemployment, proceeded with Clause I., which defines the persons to be insured. Two far-reaching amendments were approved of, especially one securing that the class of voluntary contributors shall be limited to persons whose income does not exceed £160. The compulsory character of the insurance was maintained, and extension of benefits to married women refused, with the understanding that later the possibility of including married women, formerly contributors, will be considered, while Clause 34 is under debate.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, Paris.
Bibliothèque de Thérapeutique. Publiée sous la Direction de A. Gilbert et P. Carnot. Thérapeutique des Maladies Respiratoires et de la Tuberculose Pulmonaire. Par les Docteurs Ed. Hirtz Rist et Ribadeau-Dumas, Tuffier et J. Martin, Kuss. Price Fr.14.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.
On Writing Theses for M.B. and M.D. Degrees. By H. D. Rolleston, M.D., F.R.C.P., Senior Physician, St. George's Hospital. Price 1s. net.

HIRZEL, S., VERLAG VON, Leipzig.
Lehrbuch der Pathogenen Mikroorganismen. Die Pathogenen Bakterien. Für Studierende und Aerzte. Von Dr. Paul V. Baumgarten, Professor der allgemeinen Pathologie und der pathologischen Anatomie an der Universität Tübingen. Price, paper, M.24; Halbfranz, M.26.50.
Handbuch der Hygiene. Herausgegeben von Prof. Dr. M. Rubner, Geh. Medizinalrat, Berlin; Prof. Dr. M. v. Gruber, Obermedizinalrat, München; und Prof. Dr. M. Ficker, Berlin. II. Band, 2. Abteilung. Wasser und Abwasser. Price, paper, M.15; Halbfranz, M.18.

JAMES AND SONS. Thakurdwar, Bombay.
Physiology of the Central Nervous System and the Special Senses. (For the Use of Students.) By N. J. Vazifdar, L.M. & S. Price Rs.2, post free, or 2s. 8d.

JOURNAL OF NERVOUS AND MENTAL DISEASE PUBLISHING COMPANY, 64, West 56th Street, New York.
Nervous and Mental Disease Monograph Series No. 8. Mental Mechanisms. By William A. White, M.D., Author of "Outlines of Psychiatry," Superintendent, Government Hospital for the Insane, Washington, D.C. Price $2.00.

KARGER, S., Berlin.
Psychiatrische Vorträge für Aerzte, Erzieher und Eltern. (Zweite Serie.) Prof. Dr. G. Anton, Direktor der Klinik für Geistes und Nervenkranke in Halle a. S. Price M.2.
Die Pathologie des Wachstums im Säuglingsalter in ihren Beziehungen zu allgemein biologischen Problemen und in ihrer Bedeutung für die Klinik. Von Dr. Ernst Schloss. Price, paper, M.5; bound, M.6.20.
Kurzgefasste Chirurgische Operationslehre (Operationskurs). Für Studierende und Aerzte. Von Dr. Ad. Oberst, I. Assistent an der Chirurg. Klinik und Privatdozent für Chirurgie an der Universität Freiburg i. Br. Price, paper, M.6.20; bound, M.7.
Die palpablen Gebilde des normalen menschlichen Körpers und deren Methodische Palpation. Nach eigenen Untersuchungen an der Leiche und am Lebenden. Von Dr. Toby Cohn, Nervenarzt in Berlin. III. Teil: Hals und Kopf. Price M.8.
Uber Scharlach (der Scharlacherkrankung zweiter Teil). Von Dr. Dionys Pospischill, k.k. Primararzt und Dr. Fritz Weiss, gew. Assistent der Abteilung. (Aus dem Kaiser Franz Josef-Regierungs-Jubiläums-Kinderspitale der Gemeinde Wien. (Infektionsabteilung für Kinder im k.k. Wilhelminenspitale.)) Price M.5.
Beiträge zur Technik und dem klinischen Werte der Rektoromanoskopie. Von Dr. Ludwig v. Aldor in Karlsbad. (Sonder-Abdruck aus Band XVII. (1911), Archiv für Verdauungs-Krankheiten.) Price not stated.

KEGAN PAUL, TRENCH, TRÜBNER, AND CO., LIMITED, London.
Scots in Canada. A History of the Settlement of the Dominion from the Earliest Days to the Present Time. By John Murray Gibbon. With Twelve Illustrations, by Cyrus C. Cuneo and C. M. Sheldon. Price 1s. net.

KIMPTON, HENRY, London. (STENHOUSE, ALEXANDER, Glasgow.)
A Treatise on Diseases of the Eye. By John Elmer Weeks, M.D., Professor of Ophthalmology in the University and Bellevue Hospital Medical College (Medical Department of New York University). Price 30s. net.

MASSON ET CIE, Paris.
La Méningite Cérébro-Spinale. Par MM. Arnold Netter, Professeur agrégé à la Faculté de Paris, Médecin de l'Hôpital Trousseau et Robert Debré, Ancien interne-lauréat des Hôpitaux de Paris. Price, Fr.8.

MURRAY, JOHN, London.
The Reduction of Domestic Mosquitoes. Instructions for the Use of Municipalities, Town Councils, Health Officers, Sanitary Inspectors, and Residents in Warm Climates. By Edward Halford Ross, M.R.C.S. Eng., L.R.C.P. Lond., Liverpool School of Tropical Medicine, late Health Officer, Port Said and Suez Canal District. Price, 5s. net.

REBMAN, LIMITED, London.
The Human Atmosphere or the Aura Made Visible by the Aid of Chemical Screens. By Walter J. Kilner, B.A., M.D. Cantab., M.R.C.P., &c., late Electrician at St. Thomas's Hospital, London. Price 30s. net, complete, including the necessary chemical screens in a box and book of 36 Perforated Diagnosis Charts.
Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord. A Concise Introduction to the Principles of Clinical Localisation in Diseases and Injuries of the Central Nervous System. By Robert Bing, Privat-docent for Neurology in the University of Basle. Translated by F. S. Arnold, B.A., M.B., B.Ch. Oxon. Price 10s. 6d. net.

SCHOETZ, RICHARD, Wilhelmstrasse, 10, Berlin.
Die Röntgenstrahlen in der Gynäkologie mit einem Ausblick auf ihren künftigen Wert für soziale und sexuelle Fragen. Von Dr. med. Manfred Fraenkel, Charlottenburg. Price, paper, M.7.50; bound, M.8.50.

WERNER UND HÖRNIG (Inh. OTTO LYCHENHEIM), Lübeck.
Zwanzig Jahre Kranken- und Invalidenfürsorge der Landes-Versicherungsanstalt der Hansestädte. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BARTLETT, C. E., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Tintern District of the county of Monmouth.

CROWE, J. T., L.S.A. Lond., L.M.S.S.A. Lond., has been appointed Medical Officer to the P. F. Collier Dispensary for the Prevention of Tuberculosis, Charles-street, Upper Ormond Quay, Dublin.

LAWSON, G. G., M.B., B.S. Vict., D.P.H., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Hebden Bridge District of the county of Yorks, West Riding.

RENNET, D., M.D. Aberd., D.P.H., has been appointed Medical Officer of Health of Chester.

THOMSON, GEORGE, L.D.S. Eng., has been appointed Honorary Dental Surgeon to the Royal Hospital for Diseases of the Chest.

WALLIS, B., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Helston District of the county of Cornwall.

WINCKWORTH, W. B., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Taunton District of the county of Somerset.

YEOMAN, J. B., M.D. Edin., F.R.C.S. Edin., has been appointed Medical Officer of Health to the Wirrall Rural District Council and six combined Urban District Councils.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDARE EDUCATION COMMITTEE.—Medical Inspector of School Children. Salary £250 per annum.

ABERDEEN PROVINCIAL COMMITTEE FOR THE TRAINING OF TEACHERS.—Medical Officer and Lecturer on School and Personal Hygiene. Salary £400 per annum.

AYLESBURY, ROYAL BUCKINGHAMSHIRE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

BARNSTAPLE, NORTH DEVON INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BIRMINGHAM CITY ASYLUM.—Junior Assistant Medical Officer and Pathologist. Salary £150 per annum, with board, apartments, and laundry.

BIRMINGHAM EDUCATION COMMITTEE.—Medical Inspector of School Children. Salary £250 per annum.

BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 per annum, with rooms, rations, laundry, and attendance.

CAMBERWELL, GORDON-ROAD WORKHOUSE, Peckham.—Assistant Medical Officer. Salary £120 per annum, with apartments, board, and washing.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Surgeon and House Physician, unmarried. Salaries £80 and £70 per annum respectively, with board, lodging, and washing.

CARDIFF UNION WORKHOUSE.—Assistant Medical Officer, unmarried. Salary £150 per annum, with rations, apartments, attendance, &c.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—Resident Medical Officer for four or six months. Salary at rate of £50 per annum, with board, lodging, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—Assistant House Surgeon for six months. Salary £30, with board, residence, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months, unmarried. Salary at rate of £50 per annum, with board, apartments, and laundry.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician. Salary at rate of £75 per annum, with board, residence, and laundry.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Resident Medical Officer. Salary £120 per annum, with board, lodging, and laundry.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HEMEL HEMPSTEAD, HERTS, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident Medical Officer, unmarried. Salary £200 per annum, with board, and residence. Also House Physician for six months. Salary 30 guineas.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon and House Physician, both unmarried, for six months. Salary in each case £30, with board, residence, &c.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—House Surgeon. Salary £50 per annum, with board and laundry.

LEEDS HOSPITAL FOR WOMEN AND CHILDREN.—Two House Surgeons. Salary at rate of £60 per annum, with board.

LEICESTER INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, apartments, and washing.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House Physician. Salary at rate of £60 per annum, with board and lodging.

LONDON HOSPITAL, E.—Six Honorary Dental Surgeons.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with rooms, attendance, board, and washing.

NEWCASTLE, Co. WICKLOW, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND.—Junior Resident Medical Officer. Salary £100 per annum, with residence and board.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Two House Surgeons. Salary £80 each per annum. Also Casualty Officer, unmarried. Salary £60 per annum. All with board, lodging, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.

NOTTINGHAM WORKHOUSE INFIRMARY.—Resident Assistant Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, and attendance.

PRESTON ROYAL INFIRMARY.—Junior House Surgeon, unmarried, for six months. Salary £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Surgeon and Two House Physicians, all for six months. Salary in each case at rate of £80 per annum, with board, residence, and washing.

RICHMOND (SURREY) ROYAL HOSPITAL.—Locum Tenens (Assistant House Surgeon) for eight weeks. Salary 3 guineas per week, with apartments, board, &c.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Third House Surgeon. Salary at rate of £50 per annum, with board and residence.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum.

ST. MARY'S HOSPITAL, London, W.—Ophthalmic Clinical Assistant. Salary at rate of £50 per annum.

SHEFFIELD ROYAL INFIRMARY.—Seventh Resident Medical Officer. Salary £60 per annum.

SHROPSHIRE EDUCATION COMMITTEE.—Medical Inspector in the Public Elementary Schools. Salary £250 per annum.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing. Also Junior House Surgeon. Salary £60 per annum, with rooms, board, and washing.

SOUTHEND-ON-SEA, BOROUGH OF.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £250 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, washing, and attendance.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, washing, &c.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

WADSLEY, NEAR SHEFFIELD, WEST RIDING ASYLUM.—Fifth Assistant Medical Officer. Salary £140 per annum, with board, &c.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Junior House Physician. Salary £75 per annum.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Bexhill-on-Sea, in the county of Sussex.

Births, Marriages, and Deaths.

BIRTHS.

APPLEYARD.—On July 3rd, at 2, Marlborough-road, Bradford, the wife of William Appleyard, F.R.C.S., of a daughter.

SPRAWSON.—On June 27th, at Crouch Hall-road, Crouch End, the wife of Francis E. Sprawson, M.R.C.S., L.R.C.P., L.D.S., of a daughter.

MARRIAGES.

DAVIS—RUSSELL.—On July 1st, at Balham Congregational Church, by the Rev. H. H. Carlisle, Edward David Davis, M.R.C.S., L.R.C.P., of 81, Harley-street, to Mildred, daughter of H. C. Russell, Esq., and Mrs. Russell, Red House, Streatham Hill.

HURTER—ROME.—On July 1st, at St. Michael's-in-the-Hamlet, Liverpool, by the Rev. R. Lorimer Rome, M.A., Rector of Humber (uncle of the bride), assisted by the Rev. Canon Grenside, Vicar of Melling, Carnforth, and the Rev. A. F. Thornhill, M.A., Vicar of the Parish, Herbert Richard Hurter, M.D., son of the late Ferdinand Hurter, Ph.D., M.A., and of Mrs. Hurter of Cressington Park, to Dorothy Edith, eldest daughter of Thomas Rome of Liverpool.

MASSY-MILES—INGLE.—On July 5th, at Zion Church, Rathgar, Dublin, by Rev. Canon Miles, M.A., Rector of Pangbourne, Berks (father of the bridegroom), assisted by the Rev. W. J. Clarke, D.D., Rector of the Parish, Harry Godfrey Massy-Miles, L.R.C.P. & S. Irel., of 36, Marlborough-road, St. Albans, to Charlotte Elizabeth Josephine, eldest daughter of the late Arthur F. Ingle, Inspector of Indian Post Offices, and of Mrs. Ingle of 24, Grosvenor-place, Rathgar, Dublin.

DEATHS.

BROWN.—On June 28th, at his residence, Willesden-lane, N.W., Brigade-Surgeon Thomas Edwin Burton Brown, M.D., C.I.E., aged 78.

LOWDELL.—On June 26th, at Hampstead, Edward Lowdell, M.R.C.S., in his 88th year.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL SPECIALISTS IN ANCIENT ROME.

A LATIN inscription discovered in Rome affords a further proof of the existence of medical specialists under the Roman Emperors, for in referring to a certain Secundus it bestows upon him the title of "medicus auricularius." He was a freedman of Tiberius. Another specialist with the same appellatives may be found in the Corpus of Latin Inscriptions, Volume VI., text 8908, and a passage in the Digest of the celebrated jurist Ulpian plainly indicates the medical specialist as flourishing in his era: "Medicos fortassis quis accipiet etiam eos, qui alicuius partis corporis vel certi doloris sanitatem pollicentur: ut puta si auricularius, si fistulæ vel dentium." Of course, the medici ocularii are familiar not only for their epitaphs but for their seals. It is not perhaps so well known that "medici chirurgi" are mentioned in at least three inscriptions in the Corpus of Latin texts.

CARBON DIOXIDE SNOW AS A SKIN ANÆSTHETIC.

To the Editor of THE LANCET.

SIR,—Whether we be physicians or surgeons, workers in vaccines or electro-therapeutists, none of us can in these days afford to ignore the hypodermic syringe. Yet some nervous patients dread the needle almost as much as a major operation. Considering the formidable appearance of some of these instruments, and their oftentimes more than doubtful sharpness, this alarm is not altogether unreasonable. In the past pure carbolic acid and the ethyl-chloride spray have been much used as a means of dulling the pain of the needle-prick. To rely on them absolutely, and to promise a patient that no pain will be felt, is, however, to risk being subsequently told that the truth is not in you. But if the skin be first frozen for from 5 to 10 seconds with a pencil of CO_2 snow, the immediate insertion even of a large needle produces no sensation whatever. In the case of healthy skin and subjacent tissues the method is infallible, but it should be remembered that, say, in the case of an abscess, the mere *pressure* necessary to effect ingress will cause some amount of pain. By this means sera, vaccines, radium-emanation, and the like, can be injected into the most cowardly; had I no other use for my CO_2 apparatus I should consider it well worth the money as an adjunct to hypodermic medication.—I am, Sir, yours faithfully,

Bishop Auckland, June 27th, 1911. FRANCIS HERNAMAN-JOHNSON.

CRUSADE AGAINST CONDENSED MILK.

IN THE LANCET of June 24th, 1911 (p. 1737), it was stated that the Bureau of Chemistry of the United States Department of Agriculture has recommended the prosecution of certain manufacturers of condensed milk, and that the Bureau finds that much of this milk is dangerous as a food for infants. The Nestlé and Anglo-Swiss Condensed Milk Company informs us that the "condensed milk" in question is what is known in this country as "condensed machine-skimmed milk"—a product which has small right to the title of "milk."

DIET DURING MERCURIAL TREATMENT.

To the Editor of THE LANCET.

SIR,—I will thank you or some of your readers to inform me whether the old view that meat ought not to be given during an acute course of mercury still holds the field. I have chiefly in my mind mercury given for syphilis. Animal food during a prolonged chronic course of mercury is not, I take it, prohibited.

I am, Sir, yours faithfully,

June 20th, 1911. SENEX.

*** We are not aware of any such restriction, nor can we find any mention of it in the principal text-books on diet and on the treatment of syphilis. Care should, of course, be taken that the diet is plain and simple in character.—ED. L.

NEW INFANTS' WEIGHT CHART.

WE have received an infants' weight chart designed by Henry D. Kelf and published by S. Maw, Son, and Sons. This chart is for family or institutional use; it is simple and well designed. It contains spaces for the registration of the daily weights for the first fortnight and after that for weekly weighings up to the end of the first half year. This chart, numbered 4, follows the same idea as Nos. 1, 2, and 3 weight charts published by Mr. Kelf in 1902.

WARWICK X RAY PLATES.

WE have received from the Warwick Dry Plate Company of Warwick specimens of their plates for trial and report. They were first subjected to the test of keeping power, and in this respect they were in every way satisfactory. All workers in medical radiography require great speed in the plates they use, and the statement can be made in regard to the examples sent for inspection that the period of exposure was particularly short. Another very important consideration in radiography is the question of density; and here, again, the Warwick X ray plates were found to satisfy all requirements. In regard to brilliancy and detail these plates can be safely recommended to practitioners.

F. G. M. R.—1. We understand that "Spirone" has been tried in some chest hospitals and sanatoriums and that it sometimes gives relief to the cough of chronic respiratory affections. It is given as an inhalation in cases of pulmonary tuberculosis, asthma, and chronic bronchitis. It cannot, however, be regarded as a specific treatment, but may be given for the relief of symptoms. 2. In regard to the suitability of South Africa for patients with bronchitis, the high uplands of the veldt country are suitable for most pulmonary complaints, since the summer months are dry and warm and the winter is temperate, but the coast regions are not good for these patients.

"*Spes*" wants information as to the preparation (French) "dioradin"; the proprietor claims that the preparation contains terpin and iodin with radium and that it can be subcutaneously injected with good results in pulmonary tuberculosis.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
,, 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th–Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
,, 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
,, 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th–Oct. 31st (London).—Earl's Court Exhibition.
June 1st–August 31st (Squirrels Heath, Romford).—Town Planning and Modern House and Cottage Exhibition.
July 13th and 14th (Oxford).—Oxford Ophthalmological Congress.
,, 13th and 14th (Dublin).—Seventieth Annual Meeting of the Medico-Psychological Association of Great Britain and Ireland.
,, 24th–27th (Portsmouth).—British Pharmaceutical Conference.
,, 24th–28th (London).—Second International Congress of Urology.
,, 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
,, 24th–August 2nd (Belfast).—Health Exhibition in connexion with above Congress.
,, 25th–28th (Birmingham).—British Medical Association, Seventy-ninth Annual Meeting.
,, 26th (Rouen).—French National Dental Congress.
,, 26th–29th (London).—Universal Races Congress.
,, 31st–Aug. 4th (Paris).—Second French Congress of Stomatology.
,, 31st–August 5th (Dijon).—Congress of the French Association for the Advancement of Sciences.
August 1st–6th (Amiens).—Twenty-first French Congress of Alienists and Neurologists.
,, 3rd–5th (London).—British Dental Association, Annual Meeting.
,, 12th–18th (Brussels).—First International Congress on Child Study.
,, 12th–30th.—E.M.I. (Enseignement Médico-mutuel International) Tour in Scandinavia.
,, 15th–21st (Dublin).—Royal Institute of Public Health.
,, 21st–23rd (Larvik).—Fourteenth Norwegian Physicians' Congress.
,, 28th–Sept. 11th (South-East of France).—Eleventh "Voyage d'Études Médicales."
,, 30th–Sept. 2nd (Berlin).—Third International Laryngo-Rhinological Congress.
,, 30th–Sept. 6th (Portsmouth).—British Association.
,, 31st and Sept. 1st (Vancouver).—Thirteenth Annual Meeting of the British Columbia Medical Association.
Sept. 4th–9th (Yarmouth).—Sanitary Inspectors' Association. Annual Conference.
,, 5th–7th (Philadelphia).—American Electro-therapeutic Association.
,, 9th–11th (Ostend).—Fifteenth Flemish Nature and Medical Congress.
,, 11th–13th (Vienna).—German Urological Society.
,, 11th–15th (Berlin).—Third International Conference on Infantile Mortality (*Gouttes de Lait*).
,, 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.

Sept. 12th-15th.—Celebration of the 500th Anniversary of the Foundation of the University of St. Andrews.
,, 18th-23rd (Rome) Seventh International Congress of Dermatology and Syphilology.
,, 18th-23rd (Sydney).—Australasian Medical Congress.
,, 23rd-Oct. 21st (London, Olympia).—Electrical Exhibition.
,, 24th-30th (Rome).—Seventh International Congress on Tuberculosis.
,, 25th-29th (Karlsruhe).—Eighty-third Meeting of German Physicists and Physicians.
,, 26th-28th (Louisville, Ky.).—American Association of Obstetricians and Gynecologists.
,, 26th-30th (Brussels).—Third Congress of the International Society of Surgery and Exhibition of Fractures.
,, 29th (Edinburgh).—Association of Veterinary Officers of Health. Annual Meeting.

September (Genoa).—International Exhibition of Marine Hygiene.
,, (Turin).—Congress of the Association of Italian Railway Physicians.
,, (London).—Bakers' and Confectioners' Exhibition.
,, (Manchester).—Second Conference of the British Hospitals Association.

September-November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.

Oct. 1st-4th (Liége).—Second Congress of Alimentation.
,, 2nd-5th (Turin).—International Congress of Pathology.
,, 2nd-6th (London, Royal Horticultural Hall).—Seventh London Medical Exhibition.
,, 2nd-7th (Dresden).—Third International Housing Congress.
,, 2nd-7th (Paris).—French Congress of Surgery, Twenty-fourth Annual Congress.
,, 3rd-6th (London).—Dairy Show.
,, 5th-8th (Turin).—Fourth National Congress of Hygiene.
,, 9th-12th (Turin).—Twenty-first Congress, Italian Society of Internal Medicine.
,, 9th-13th (Cologne).—Seventh International Congress of Criminal Anthropology.
,, 22nd and 23rd (Lyons).—Twelfth French Congress of Medicine.
,, 25th-27th (New York City).—Annual Conference of Sanitary Officers of the State of New York.

October (Paris).—International Sanitary Conference (to Revise the International Sanitary Convention of 1903).
,, (Paris).—First Congress of the International Medical Association for the Prevention of War.

November (London).—Motor Exhibition.
,, (Manchester).—Smoke Abatement Exhibition.

Dec. 4th-9th (Havana, Cuba).—American Public Health Association.

December (Moscow).—Third Pan-Russian Therapeutical Congress.

In 1912:—
Jan. 20th-27th (Hong-Kong).—Second Biennial Congress of the Far Eastern Association of Tropical Medicine.
Spring (London).—Second Optical Convention.
May 31st-June 2nd (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
May (London).—International Horticultural Exhibition.
July (Liverpool).—British Medical Association, Eightieth Annual Meeting.
Sept. 23rd-28th (Washington, D.C.).—Fifteenth International Congress on Hygiene and Demography.
September (Prague).—International Congress of Radiology and Medical Electrology.
(Budapest).—Tuberculosis Exhibition.
(Stockholm).—Olympic Games.

In 1913:—
Aug. 6th-12th.—(London).—Seventeenth International Congress of Medicine.
(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)
(Chicago).—Congress of the International Association of Refrigeration.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 5th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks
June 29	30·21	S.W.	...	117	70	60	59	63	Cloudy
,, 30	29·83	S.W.	0·17	92	63	55	56	58	Cloudy
July 1	29·67	S.W.	...	107	64	56	56	61	Cloudy
,, 2	29·85	W.	...	123	68	51	52	57	Cloudy
,, 3	30·28	N.W.	...	121	69	51	51	58	Cloudy
,, 4	30·47	S.W.	...	123	73	55	55	62	Fine
,, 5	30·44	S.W.	...	118	79	61	60	66	Overcast

Medical Diary for the ensuing Week.

SOCIETIES.

NEW LONDON DERMATOLOGICAL SOCIETY, Cavendish Rooms, Mortimer-street, W.

THURSDAY.—4.30 P.M., Meeting.

OPHTHALMOLOGICAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Cases and Card Specimens will be shown by Mr. Lawford, Mr. F. Moxon, Mr. Roll, Mr. Greeves, Mr. Cruise, and Mr. McMullen. Paper:—Mr. W. H. Jessop: Monocular Lid-wink as a Diagnosis of Long-standing Amblyopia. The Annual General Meeting will follow immediately after the Ordinary Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Mr. J. H. R. McDonagh: Clinique (Skin). 5.15 P.M., Lecture:—Dr. J. L. Bunch: Lupus and its Treatment.
TUESDAY.—4 P.M., Dr. R. A. Young: Clinique (Medical). 5.15 P.M., Lecture:—Dr. W. Hadley: Prognosis in Heart Disease.
WEDNESDAY.—4 P.M., Mr. H. S. Pendlebury: Clinique (Surgical). 5.15 P.M., Lecture: Dr. F. W. Price: Some Newer Conceptions of Cardiac Disorders (illustrated by the polygraph).
THURSDAY.—4 P.M., Dr. W. P. S. Branson: Clinique (Medical). 5.15 P.M., Lecture:—Dr. T. C. Fox: The Erythemata.
FRIDAY.—4 P.M., Mr. C. J. Heath: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Morton: The Use of Solid Carbon Dioxide.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Simson: Acute Conditions of the Fallopian Tubes.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture VI.)
THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery. (Lecture V.)
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Pardoe: Pyuria as a Symptom of Urinary Disease.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Medical Registrar: Demonstration of Cases in Wards. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies).
TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. H. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. H. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. H. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Dr. H. Pirie: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Mr. S. Boyd: The Surgical Treatment of Empyema.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Dr. D. McKenzie: Ear.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.) Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (12th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (13th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (15th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

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